

Marine Review

The National Publication Covering the Business of
Transportation by Water

July, 1927

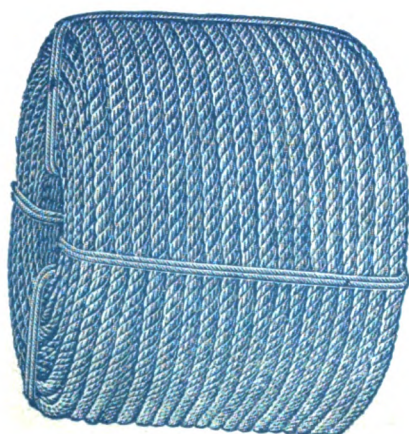


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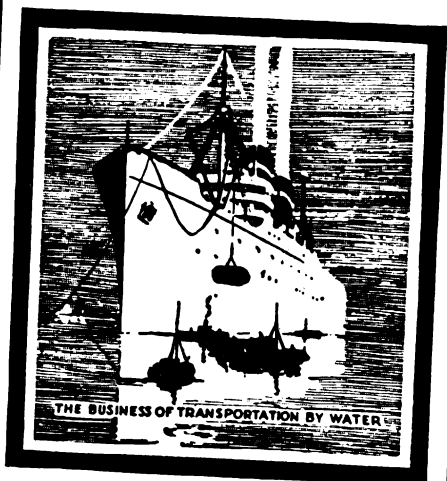
Marine Review

The National Publication Covering the Business of
Transportation by Water

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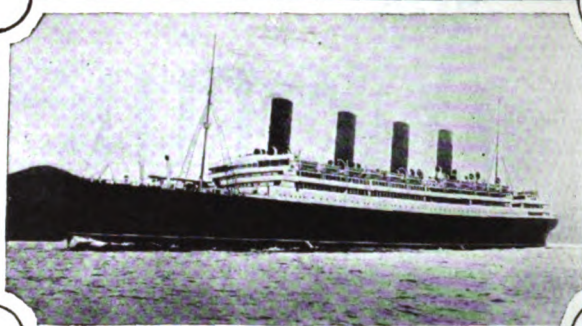
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No. 7

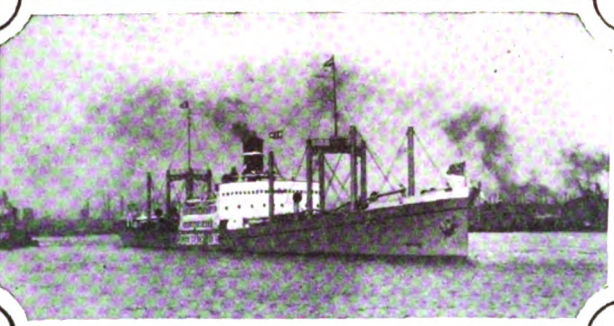
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PASSENGER and FREIGHT SHIPS
S/s President Pierce Dollar Steamship Company



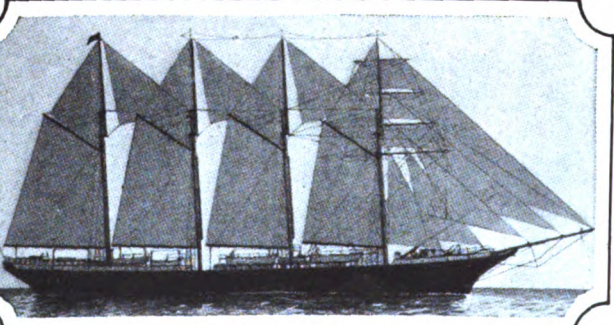
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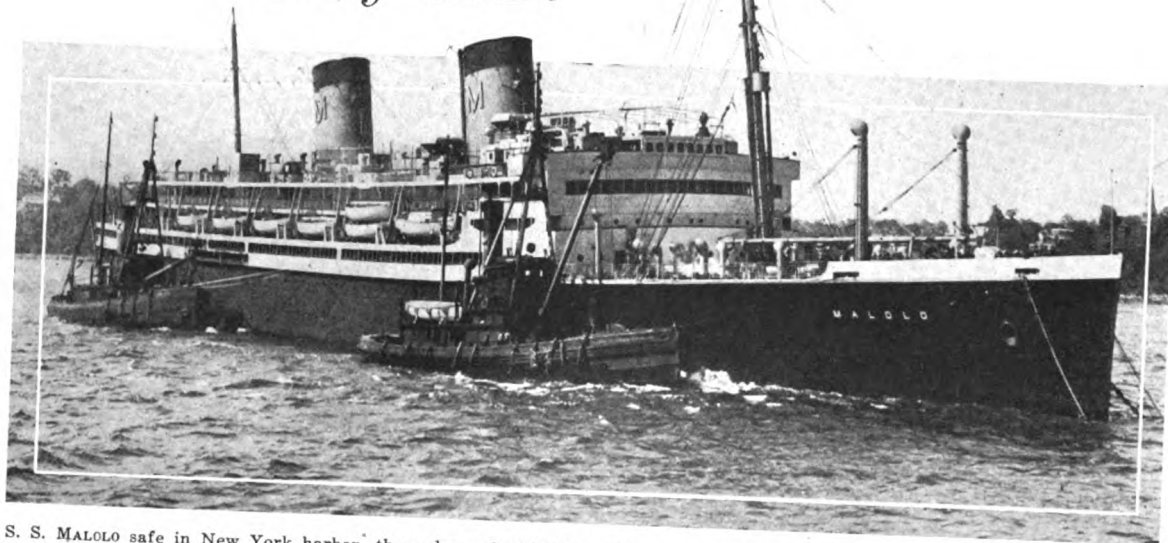
*In addition to those installed on merchant ships there are over one thousand four hundred Sperry Gyro-Compasses installed on vessels of the following Navies—United States, Great Britain, Japan, France, Italy, Spain, Argentina, Brazil, Chile, Sweden, Denmark, Norway and Peru.



Sperry Gyro-Compasses

Marine Review

July 1927



S. S. MALOLO safe in New York harbor, three days after being badly rammed. Her seaworthiness given extreme test proving value of building for utmost safety

Malolo Severely Damaged Remained Afloat and Stable

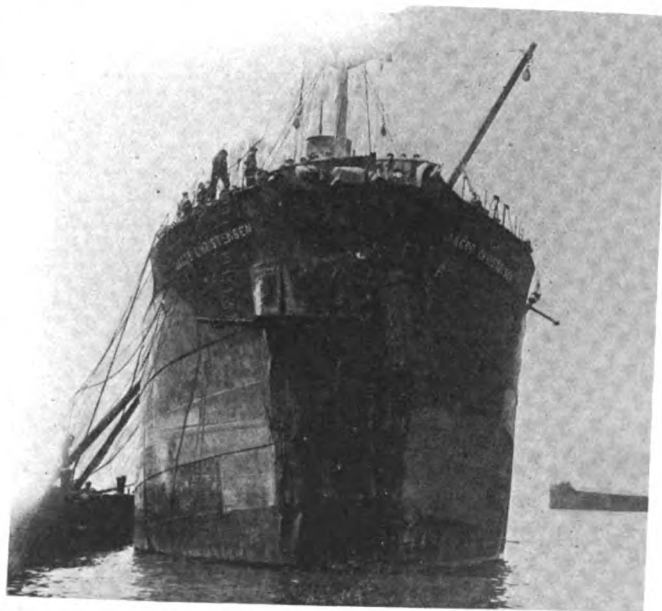
By E. C. Kreutzberg

ON MAY 25 occurred the most remarkable trial test of a passenger vessel within the memory of the present generation of American shipbuilders. The MALOLO, largest and swiftest passenger ship ever built in the United States, had, 32 hours before, left Cramp's shipyard at Philadelphia on her builder's trial trip and was on her way to the United States navy measured mile course, off Rockland, Me. In foggy weather, 26 miles off Nantucket light, she was rammed full a-beam by the Norwegian freighter, JACOB CHRISTENSEN. This collision, of a type that heretofore has proved fatal in every case as far as the records reveal, was sustained successfully by the MALOLO. Examination of the tell-tales revealed that the ship's maximum list during and after the accident at no time exceeded 2 per cent from the perpendicular. She was towed to the plant of the Morse Dry Dock & Repair Co., South Brooklyn, and is expected again to be ready for operation about the middle of September.

William Francis Gibbs, president of Gibbs Bros. Inc., New York, who designed the MALOLO and supervised her construction, described the effects of the collision as follows:

"The MALOLO was struck almost exactly on the boiler room bulkhead dividing the forward from

the after boiler room. Eight plates, including the sheerstrake of the MALOLO were punctured. Seven frames were badly bent and distorted and two frames broken. The plate just above the bilge in the after boiler room was completely stove in with its lower line of rivets sheared and the whole plate distorted and fractured. After the MALOLO compartments were pumped



S. S. JACOB CHRISTENSEN, the Norwegian freighter that rammed the MALOLO, delivered her cargo dry at Philadelphia

MARINE REVIEW—July, 1927

out, two sections of the JACOB CHRISTENSEN'S stem, apparently at the curve of the forefoot, were found on the MALOLO'S boiler floor. For a space of approximately 25 feet fore and aft, and for about 15 feet vertically—and all below the waterline—the plating was distorted and fractured together with adjacent supporting structure, while in addition similar conditions existed above the waterline to the sheerstrake."

Among those on board the MALOLO at the time was Rear Admiral D. W. Taylor, retired, former chief constructor of the United States navy. He stated that the ramming was in the most vulnerable part of the ship and that it was equivalent in damage to an accurately placed torpedo. The prow of the JACOB CHRISTENSEN tore a hole in the side plates of the MALOLO through which a tall man may walk without stooping. Through this hole, some 10 feet below the waterline, the water rushed in a torrent, almost instantly flooding both compartments. The boiler room crew barely had time to escape by means of the emergency escapes. The MALOLO'S oil burning fires were immediately drowned out, the vessel thus being left without steam power for any of her engine room equipment, including the main generators. Because of the lack of power, the anchor could not be raised so that some 20 tons of anchor and chain had to be let go. Current for the lights, however, was obtained first from the ship's storage battery plant, and subsequently from an auxiliary Diesel-engine driven generator, located on D deck. This also furnished current for the radio.

The MALOLO was towed to New York harbor where three additional large tugs were called to assist in moving her through Ambrose channel. After being temporarily patched and pumped out, the MALOLO was placed in the Morse dry dock on June 2. Incidentally, this was one of the biggest towing jobs ever known, involving a dead-weight of 33,000 tons. The MALOLO

drew 36 feet forward and 26 feet aft and the tow moved at the rate of about five knots.

In commenting on the collision, Mr. Gibbs stated that at no time was the MALOLO in danger of sinking. He pointed out that on no previous occasion had a large passenger vessel, similarly rammed, been able to remain afloat. The MALOLO, he said, was

Seaworthiness Proven

With her two boiler compartments flooded after being rammed by the freighter JACOB CHRISTENSEN the S. S. MALOLO was at no time in danger of sinking or capsizing. This extraordinary practical demonstration proves beyond doubt that the carefulness with which the recommendations of the London conference on safety at sea were followed and even exceeded has brought forth the first vessel ever built in this country able to sustain such an extreme damage to a vital part without danger of foundering.

built with safety of passengers as the primary consideration.

"The MALOLO was built entirely in compliance with the rules adopted by the International Convention for the Safety of Life at Sea, which was held at London, in 1914, following the sinking of the TITANIC," said Mr. Gibbs to a representative of the MARINE REVIEW. "It is the first passenger vessel to be built in the United States

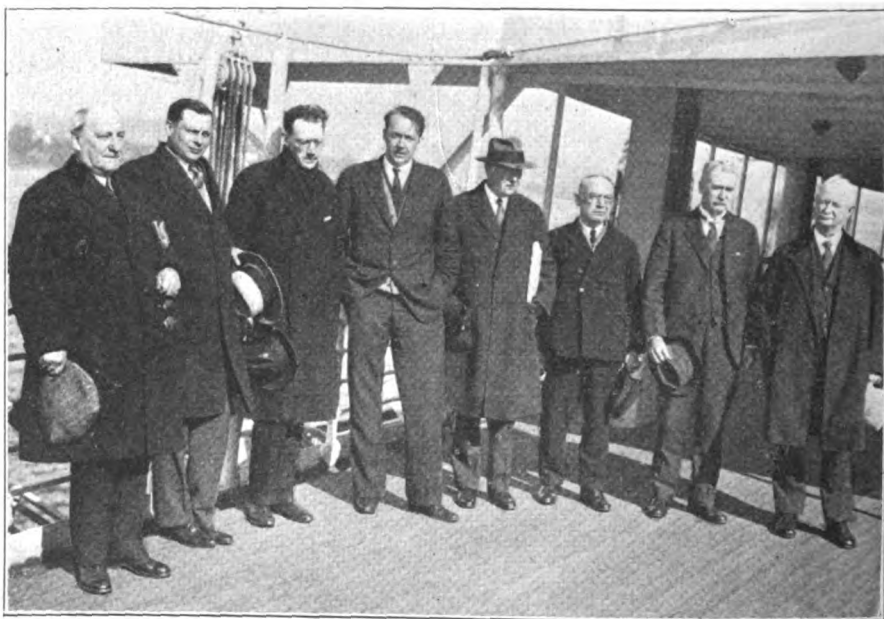
in full compliance with these provisions. In addition to the bulkhead and other provisions in this code, we incorporated some new features in the design of the MALOLO. Chief of these was the installation of hydraulic emergency scupper valves. All of these valves are controlled from the engine hatch which is located high up in the ship. When the two compartments were flooded at the time of the collision, and the ship developed a higher waterline, all of the emergency scupper valves were closed, thus preventing water from flowing through the scuppers and flooding successively the other compartments in the ship.

"The notable feature about the MALOLO is her stability. At no time during or after the collision did she develop a list of more than 2 per cent from the perpendicular. This stability was obtained by giving the ship an unusually broad beam. A narrow beam ship with less stability is sure to develop a much greater list than a broad beam ship, and where the listing immediately following the moment of impact is so great as to lower the ports and other openings below the surface, the flow of water may be so violent as actually to prevent the ship from recovering from the original listing.

"Safety features which enabled the MALOLO so successfully to withstand this collision involved a cost which increased the total outlay for the construction of the vessel by less than 5 per cent."

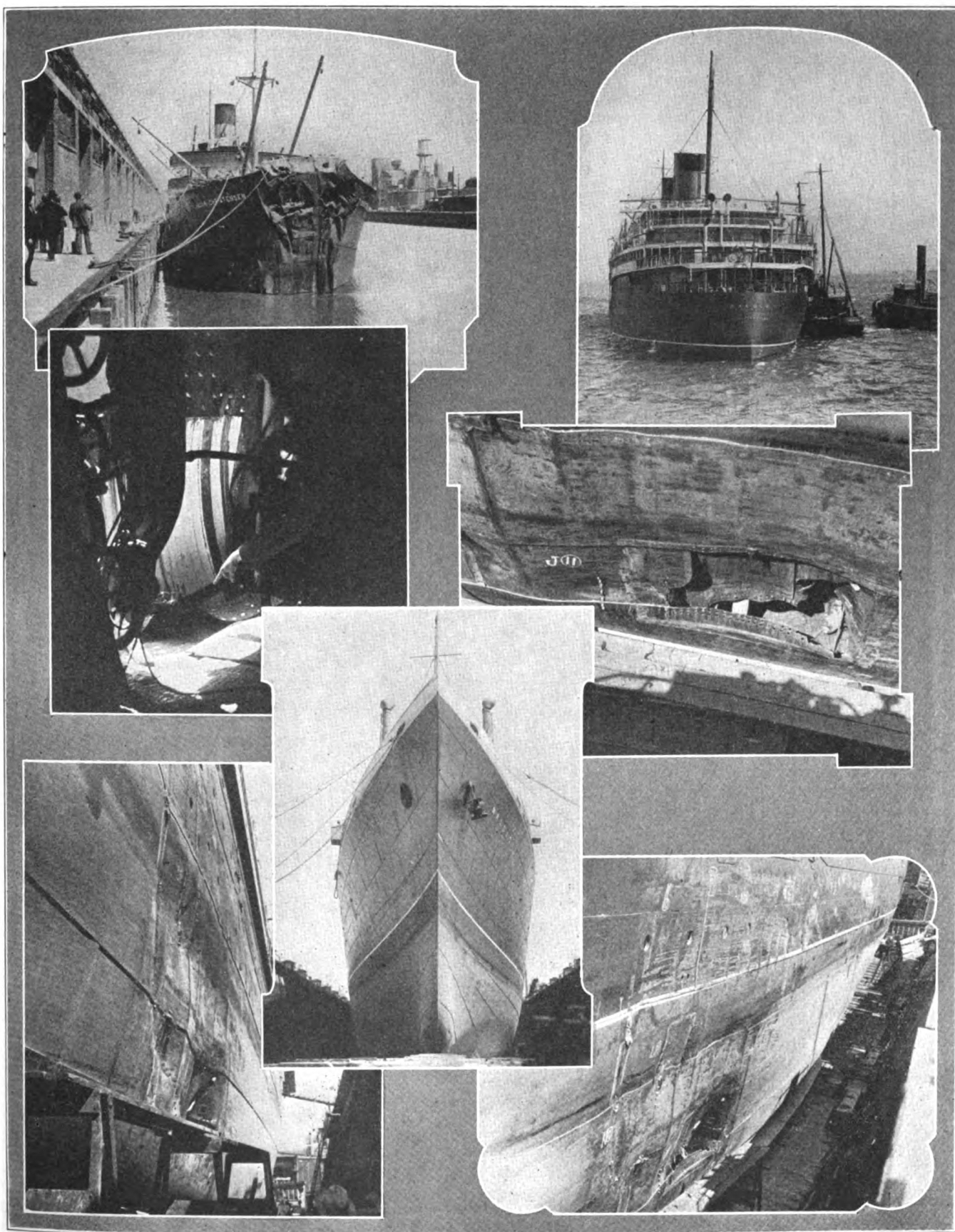
Results of the collision, Mr. Gibbs

believes, point to their own moral. It is desirable, he feels, that the United States enact into law the provisions of the International Convention for Safety of Life at Sea, not only because these provisions are adequate to meet the requirements but also because their enactment would promote uniformity of practice among maritime nations. He pointed out that these provisions already have been adopted as law in Great Britain and that they are being



ON BOARD OF THE MALOLO FOR HER TRIALS—LEFT TO RIGHT—W. A. DOBSON, NAVAL ARCHITECT AT CRAMPS; W. P. ROTH, PRESIDENT MATSON NAVIGATION CO.; W. F. GIBBS, DESIGNER OF THE MALOLO AND PRESIDENT OF GIBBS BROS. INC.; F. A. GIBBS, VICE PRESIDENT OF GIBBS BROS. INC.; J. D. TOMLINSON, VICE PRESIDENT AMERICAN-HAWAIIAN S. S. CO.; J. H. MULL, PRESIDENT OF CRAMPS; ADMIRAL D. W. TAYLOR, CONSULTING NAVAL ARCHITECT, AND W. ALEXANDER OF THE EXECUTIVE COMMITTEE OF THE MATSON NAVIGATION CO.

The Crippled Malolo Safe in Drydock



VIEWS OF THE S. S. MALOLO AT MORSE DRY DOCK & REPAIR CO., BROOKLYN, N. Y., WHERE SHE WAS TOWED AFTER HER COLLISION WITH THE FREIGHTER JACOB CHRISTENSEN (UPPER LEFT) OFF NANTUCKET LIGHT, ON MAY 25. THE DAMAGE EXTENDS 25 FEET FORE AND AFT AND 15 FEET VERTICALLY BELOW THE WATERLINE AND TO SHEER STRAKE ABOVE ON THE PORT SIDE OF THE BOILER ROOMS. THE ACTUAL HOLE WAS LARGE ENOUGH FOR A TALL MAN TO WALK THROUGH. ONE VIEW SHOWS A PART OF THE STEM OF THE FREIGHTER BROKEN OFF IN THE COLLISION AND LEFT ON THE BOILER ROOM FLOOR

observed in Italy. Mr. Gibbs believes particularly that it is essential to define by law the requirements for bulkheads. He pointed out, for instance, that it is permissible under the existing law to build vessels whose bulkheads are not sufficiently high to reach up to a new waterline which would be developed through the flooding of one or two single compartments.

MALOLO, at the time of the collision, was on her builder's trial trip and was in command of Captain Tilton, yard captain for the William Cramp & Sons Ship and Engine Building Co. Included among those on board were J. H. Mull, president of the Cramp company; W. P. Roth, president of the Matson Navigation Co.; J. D. Tomlinson, vice president of the American-Hawaiian Steamship Co.; Wallace Alexander of the executive committee of the Matson Navigation Co.; William Francis Gibbs, president of Gibbs Bros. Inc. and his brother, Frederic H. Gibbs, vice president of Gibbs Bros. Inc., and Admiral D. W. Taylor, United States navy, retired, consulting advisor to Gibbs Bros. Inc. Other representatives of the Matson Navigation Co. on board were F. M. Edwards, marine superintendent; C. W. Saunders, operating manager; Joseph Barker, superintending engineer; Captain Peter Johnson, commander of the MALOLO and his executive officer, C. A. Berndtson.

The MALOLO was designed by William Francis Gibbs, president of Gibbs Bros. Inc. for the Matson Navigation Co. of San Francisco, for the run between San Francisco and Honolulu. She was ordered by the American-Hawaiian Steamship Co. and will be transferred to the Matson Navigation Co. on completion. She is designed for at least 21 knots sea speed and will cut two days off the present running time between San Francisco and Honolulu. She is 582 in length, with a beam of 83 feet and is driven by twin screws operating from Parson's type geared turbines generating 25,000 aggregate horsepower, supplied with steam from 12 Babcock & Wilcox water tube boilers. She was built by the William Cramp & Sons Ship and Engine Building Co. and her launching was a notable event, attended by many prominent government officials in June, 1926. She has been so designed that she can readily and quickly be converted into an airplane carrier or a light, swift cruiser, mounting twelve 6-inch guns, or a swift army transport, for use in national emergency.

Following the collision, a chartered

tug carried newspaper representatives from New York to the disabled vessel, and the accident received headlines on the front pages for a period of several days. A feature of the stories carried in the press was that the MALOLO had established a remarkable reputation for safety.

The JACOB CHRISTENSEN, which rammed the MALOLO, had her prow stove in all the way back to the collision bulkhead but continued seaworthy. In fact, she was able to proceed to Philadelphia and deliver her cargo dry.

Use of Radio on Malolo

Immediately after the collision between the MALOLO and the JACOB CHRISTENSEN the first use of the MALOLO's radio was to communicate with the CHRISTENSEN and ascertain her condition. She reported she was in no danger and offered to take off the MALOLO's people. She was asked to come up alongside and stand by.

A message was then broadcast giving our approximate position and asking all ships nearby to come to us. This accomplished, our exact position was ascertained by radio bearings and broadcast to the ships coming up. The Tanker GULFLAND answered immediately and advised that she was about 38 miles away. Her bearing was observed on the MALOLO's radio direction finder and she was given a course to steer.

Messages were sent to the Merritt Chapman Co. at New York requesting tugs and to the coast guard base at New London for cutters. The trawler FISHER reported her position nearby and was given a course to steer. Communication was established with a number of other vessels at greater distances. The GULFLAND, FISHER, destroyer SHAW and steamer CITY OF PRETORIA were all given true courses to steer which brought them up through the fog. This was only possible by the use of the radio direction finder installed on the MALOLO. The direction finder was also used to guide the wrecking tugs as soon as they came within range. The great value and extreme accuracy of this latest aid to navigation was strikingly demonstrated.

The MALOLO's radio operators are T. M. Watson and Stanley Young. These men conducted themselves in accordance with the traditions of their calling handling speedily and efficiently the large volume of traffic. P. C. Ringgold and W. F. Aufenanger of the marine department of the Radio corporation were aboard the ship as observers, all the radio equipment and radio direction finder having been sup-

plied by the Radio Corp. of America.

A large number of messages were exchanged with each of the ships coming to the MALOLO's aid and after the emergency had passed many messages were sent for men on board to reassure their families at home. The total number of messages sent and received was about 400.

The powerful wireless equipment and radio direction finder on the MALOLO are of the very latest type. There are two complete vacuum tube transmitters and receivers. The main set puts two kilowatts of power into the antenna which is four times the power of the average ship's transmitter. The emergency set of 500 watts output is as large as the main set on the ordinary ship. The emergency radio set operating from the ship's emergency generator was used exclusively. The radio set was in almost continuous use from the time of the collision until arrival at New York a period of over 60 hours. This is an unusual safety feature as compared with the emergency equipment of the average ship which is good for only about six hours service. The MALOLO also has a storage battery to operate the radio set which could have been used had the emergency generator failed.

Build New Bay Steamer

The Newport News Shipbuilding & Drydock Co. was the successful bidder and were recently awarded the contract to build a new steamer to replace the CITY OF ANNAPOLIS sunk Feb. 24 in the Chesapeake bay. The Chesapeake Steamship Co. placed the order for the new vessel and it is expected that she will be ready for service May 1, 1928. The cost will be about \$1,000,000.

The new vessel is to be a single screw coal burning steamer 277 feet long, 53-foot beam, 13 feet draft and is to make a speed of 16 knots. Her displacement will be 3000 tons and she will accommodate 350 passengers and 500 tons of freight.

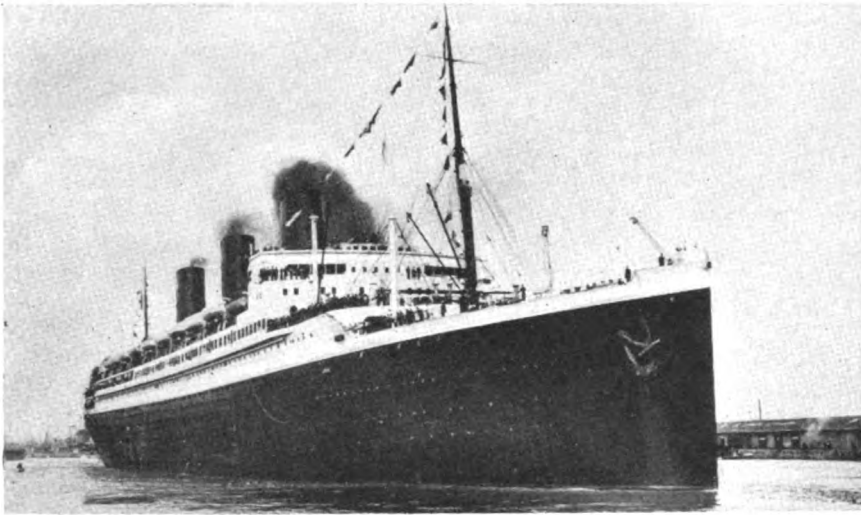
Made Superintendent

Capt. Fred A. Bailey who handled the difficult ice situation on the Great Lakes last fall with so much skill was recently appointed superintendent of the Great Lakes Towing Co. He will have general supervision of all wrecking work and will make his headquarters in Cleveland.

Captain Bailey was formerly manager of the Forest City Steamship Co. and prior to that he had sailed steamers of the Pittsburgh Steamship Co. for many years finally becoming fleet captain.

Ile de France Sails from Havre

Sixth Largest Transatlantic Liner—Accommodations of Exceptional Luxury and Elegance—Represents Best Efforts of French Workmanship and Art



THE latest French liner, *Ile de France*, recently completed at Chantiers et Ateliers, St. Nazaire, Penhoet, was scheduled to sail from Havre on her maiden voyage for New York on June 22 where she was due to arrive June 28. A large vessel, she is exceeded in size by only 5 other transatlantic liners. All the skill and painstaking care of the best French engineers, artists and craftsmen have been lavishly bestowed to make her the finest vessel afloat.

FRANCE has long been recognized by the rest of the world for outstanding accomplishments in engineering and in the arts and crafts. It is safe to say that nothing finer has been turned out than the new flagship of the French Line the *ILE DE FRANCE*. All of the genius of the French in the technical and decorative fields has been applied to make this new transatlantic vessel the most comfortable, the most beautiful and the most luxurious liner afloat. The *ILE DE FRANCE* was built at the Chantier et Ateliers de Saint Nazaire, Penhoet. She was launched on March 14, 1926. This June she sailed for Havre, on her trial trip, from where on June 22, she was to sail on her maiden voyage to New York, arriving on June 28 or 29.

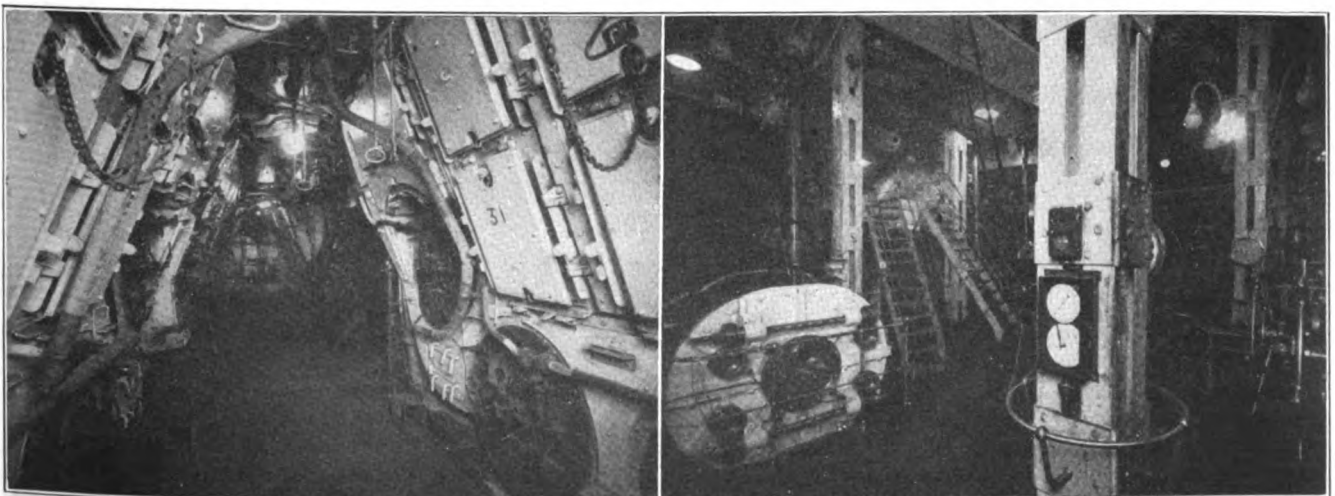
General characteristics of the vessel

are: Length, 790 feet 6 inches; beam extreme 91 feet 10 inches; depth 70 feet 6 inches; displacement about 41,000 tons; deadweight 11,500 tons; gross tonnage 41,000 tons (a figure of 43,000 tons has also been quoted). In size she is the world's sixth largest vessel. To man this giant liner 803 men are necessary including officers and crew. Accommodations are provided for 1200 first and second class and for 600 third class in cabins.

There are nine decks, five of which are continuous. The uppermost deck on which are stowed the life boats is 100 feet above the keel. The deck below the boat deck is a promenade deck. A double bottom is fitted throughout the entire length of the hull. The hull is also divided by 15 water tight bulkheads into 16 compartments. In way of the boilers

and machinery space there are compartments on each side for oil bunkers. These compartments in way of the vitals of the ship also serve as protection. Should the vessel be damaged flooding will be checked both in the horizontal and in the vertical direction. Heeling of the ship in such a case can be prevented by transferring fuel oil from one side to the other by means of two pumps which are always under pressure.

As protection against fire a special steam smothering system has been fitted in the holds, boiler, and engine room. Two receiving apparatus, one on the bridge and the other in the engine room will receive 26 fire signals located to give alarm in compartments where men are not constantly on duty. Life saving equipment is in excess of the requirements



ILE DE FRANCE—AT LEFT—ONE OF THE BOILER ROOMS—AT RIGHT—A CORNER OF THE ENGINE ROOM

proposed by the London Conference for safety at sea. This equipment includes 36 life boats, two whale boats and two power boats which are fitted with wireless apparatus and are designed to tow the life boats.

The wireless apparatus on the new liner is of the latest type and is complete in every detail. Messages can be sent over 550 miles in daylight and about 900 miles at night. Besides the regular ship's wireless there are two emergency sets, one receiving its energy from an emergency unit, but so arranged that it may be used in connection with the apparatus of the principal station and over the same range; the other receives its energy from a group of accumulators and will have a range of 150 miles by daylight and 250 miles

to burn fuel oil and operate with Howden forced draft. The twenty boilers are fitted in four water tight compartments. The capacity of the storage tanks is 7500 tons of fuel oil, sufficient for a voyage from Havre to New York and return.

Parsons type turbines drive four propellers with a total shaft horsepower of 52,000 sufficient to give the ILE DE FRANCE an average speed of 23 knots. Four triple expansion turbines are used for going forward and four double expansion turbines are used for backing. The total weight of the turbines is 1060 tons.

Passenger Accommodations

Though the ILE DE FRANCE is a large ship and her machinery and engineering features are of the most modern in marine engineering prac-

gallery of fixed and moving targets.

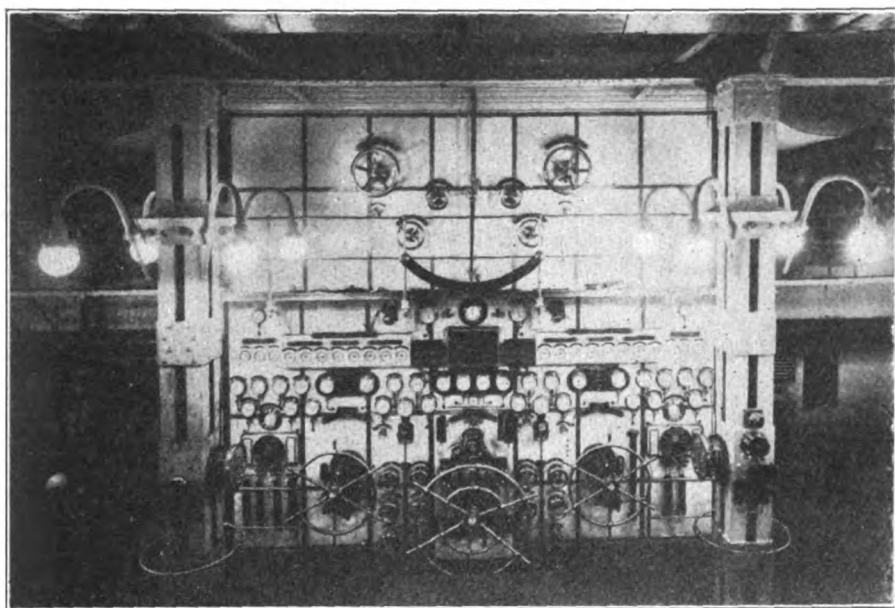
The most extraordinary public room on the ILE DE FRANCE is the huge grand salon. It compares with the main reception hall of the famous palaces of Versailles or Fontainebleau. It is harmonious and of graceful proportions. The decorations of the grand salon is the work of Sue et Mare. It is done entirely in lacquer. Around its walls are forty columns 16 feet 4 inches in height. These columns frame the four doors of art crystal two at each end and the six windows three on each side which rise to the full height of the ceiling. Between the windows stand 9 foot statues by Pommier, two on each side covered with gold and set on pedestals of marble. These statues put in relief by a luminous background symbolize the rivers of ILE DE FRANCE, the Seine, the Marne, the Oise and the Aisne. All lighting is indirect. There are many decorations including paintings and works in wrought iron. The carpet is an Aubusson and the furniture is of rich and graceful design. There are ten deep divans covered with especially made tapestry and needlepoint representing ten cities of France, arm chairs upholstered in green velvet or embroidered tapestry and dozens of tables. There is a 1000-square-foot dancing floor of inlaid mosaic of varied colored woods.

The Tea Room is Different

The decorations of the tea room are quite different. The forward end of this room forms a landing at the head of the grand staircase from which it is separated by a hand wrought iron railing done by a famous artist. The general tone of this room is gay and bright. The walls are of obliquely cut ash and divided into small panels by silver frames. Bright red columns and red lacquer doors lend to the richness of the tea room. It is lighted in day time by ten windows 16 feet 4 inches tall. These windows are draped with printed silk curtains. A heavy woolen rug covers most of the floor. This is but an incomplete description.

Aft of the tea room and its two smaller rest rooms is the smoking room which is 75 feet 4 inches wide and 47 feet 5 inches deep and 26 feet 2 inches high. It is in fact instead of one smoking room a series of smoking rooms, since it is broken up into a central part and two more secluded sections by two staircases leading up to two balcony smoking rooms both of which open on the

(Continued on Page 48)



CONTROL BOARD IN THE ENGINE ROOM OF THE ILE DE FRANCE

at night. There is also in addition a transmitting set and one set combining transmission and reception. There are a series of amplifiers for transmitting concerts all over the vessel, and one radio telephone station by which conversation may be carried on with land stations and other ships.

The ILE DE FRANCE is fitted with the Sperry gyro compass and automatic pilot operating in conjunction with the compass. There is also a radiogoniometer connected with repeaters of the gyroscopic compass by means of which it is possible to take radiophonic bearings at a distance of 200 miles with an error of less than two degrees.

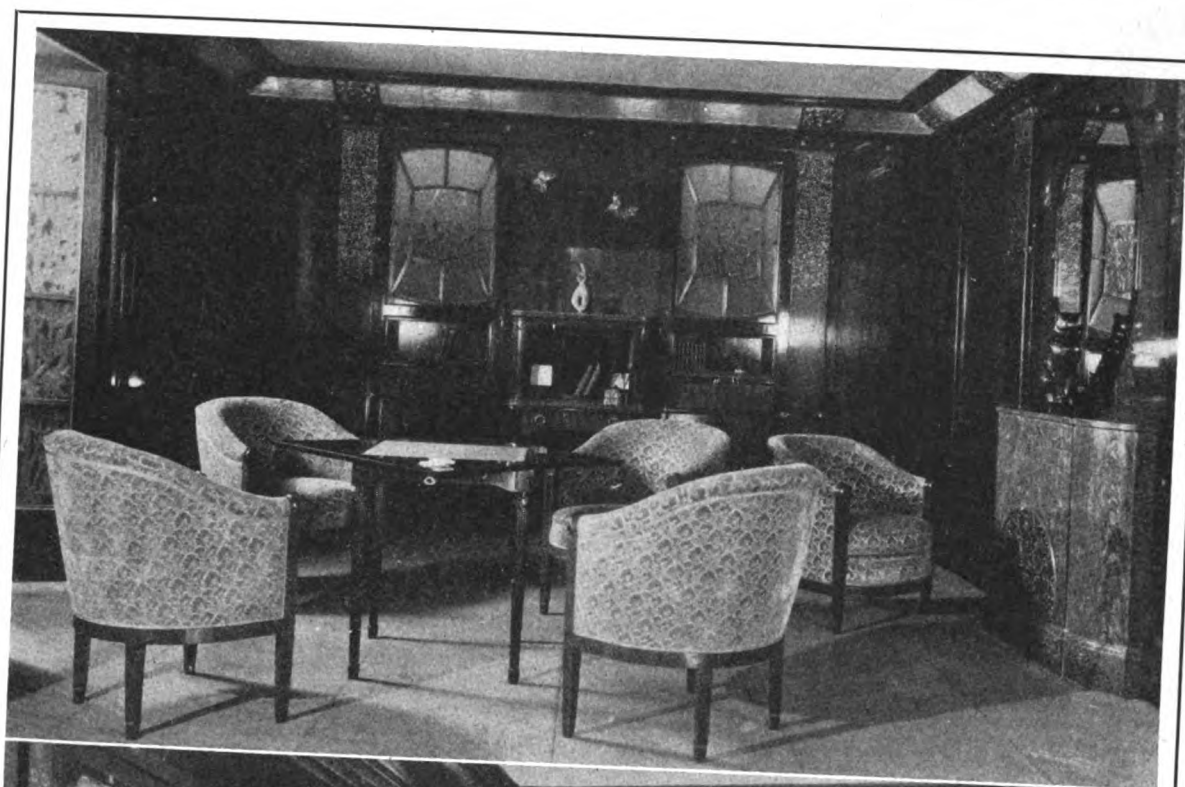
Boilers and Main Turbines

Steam is supplied by 12 cylindrical boilers with double fronts and 8 furnaces for each boiler, and 8 boilers with single fronts and 4 furnaces to each. These boilers are arranged

tice, it is not her size or engineering features alone that make her an outstanding example of shipbuilding and applied art. Passenger accommodations have been arranged to provide the utmost in comfort and elegance. She embodies a style of interior decorations and sumptuous luxury hitherto unknown even in her French sister-ships and those other floating palaces of the Atlantic. It is felt that the discriminating traveller will appreciate the sureness of taste exhibited in all the beautiful interior decorations on the ILE DE FRANCE.

In general the style of adornment is of the modern French school. Certain individual distinctive features are of interest as for instance a chapel seating 80 worshippers, several private dining rooms for the use of passengers wishing to give dinner parties, children's gymnasium including merry-go-round, and a shooting

A Suite De Luxe on the Ile de France



One of the De Luxe Suites on the ILE DE FRANCE—Above—Living Room of Suite—Below—Bed Room

MARINE REVIEW—July, 1927

New Steamer Goes Into Service

Latest Day Line Steamer Peter Stuyvesant Is Designed Especially for Passenger and Excursion Travel on the Hudson River

DESIGNED and built for passenger and excursion service on the Hudson, the new Hudson River Day Line steamer, PETER STUYVESANT, was inducted into service on June 7, when city officials, prominent railroad and steamship representatives, and other guests to the number of 1000 were entertained by a special trip from New York City to Tarrytown, N. Y. and return.

The new steamer was built by Pusey & Jones Corp., Wilmington, Del., under the supervision of and to specifications prepared by J. W. Millard & Bro. naval architects, New York, who have for years specialized in the design of Hudson river and New York harbor craft. Her cost is said to be nearly \$1,000,000. Launched on Feb. 2, she arrived in New York on May 23 and was moored at the company's pier at the foot of West Forty-second street where she was furnished and received her supplies. The practical knowledge gained by years of experience in the successful operation of day steamers has been

thoroughly applied in her design and the good proportions which make for her beauty, a noticeable feature of other steamers of the line, have been maintained.

A single screw steamer the general characteristics are: length overall, 268 feet 6 inches; length between perpendiculars, 252 feet; breadth molded at main deck, 46 feet; breadth over guards, 60 feet; depth molded to main deck at side of guard 17 feet, 3 inches; draft, 12 feet 6 inches; passenger and crew capacity 3500; bunker fuel oil capacity, 55 tons; speed, 20 statute miles per hour.

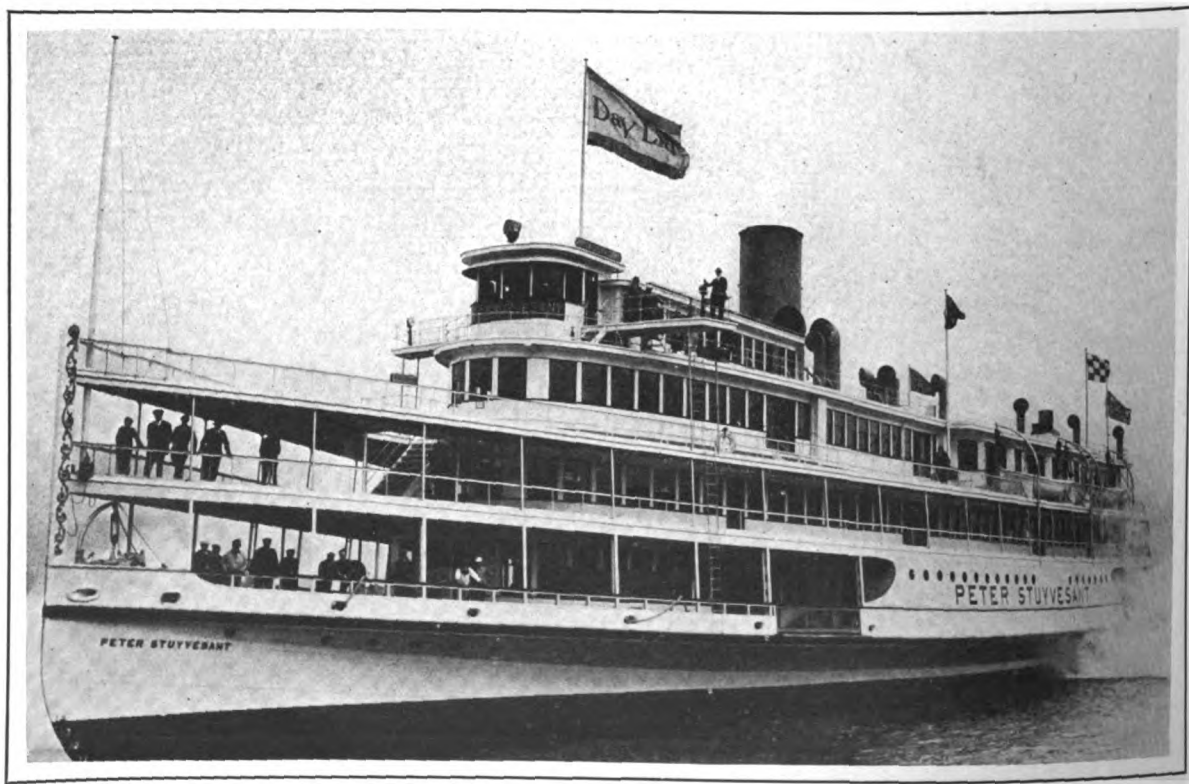
The PETER STUYVESANT embodies a number of structural elements not heretofore seen in passenger steamers in the waters around New York City and the Hudson river. Her hull and main deck are of steel with three joiner decks above. The lower forward deck and that section aft of the boiler and machinery spaces also are of steel.

Enclosed spaces of the new steamer's third deck differ from all others

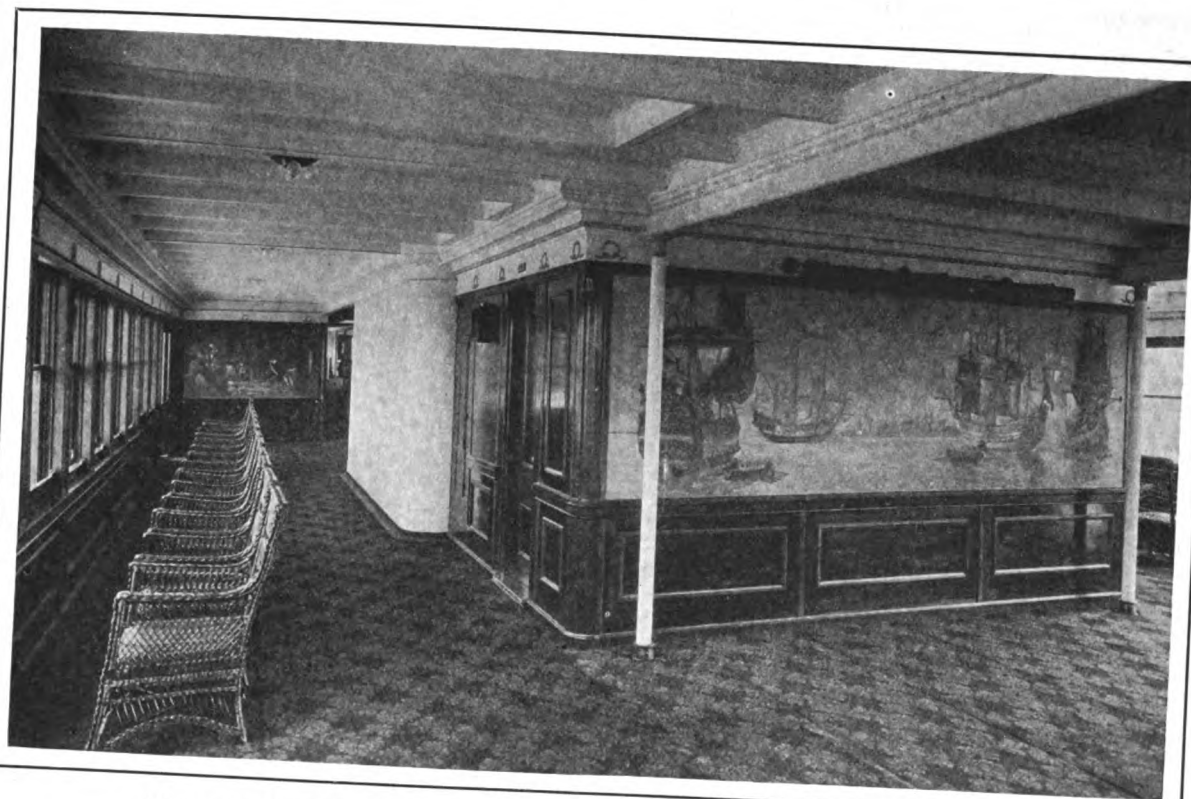
of her class on the river, since they are eighteen inches higher than the level of the corresponding outer deck. This innovation in construction gives to passengers who are seated in the enclosed deck a clear and unobstructed view over the heads of those seated on the corresponding outer deck. The second deck is entirely enclosed by plate glass doors and windows, giving to a far greater number of passengers an uninterrupted view of the Hudson and the beautifully picturesque scenery along its shores.

Instead of on the second deck as on the other steamers of the same line, the PETER STUYVESANT has its carpeted saloon on the third deck. On this deck also are eight private parlors, each having its own lavatory. The writing room also is on this deck.

The interior finish of the PETER STUYVESANT is elaborate and tasteful. Much of the interior is in mahogany and mahogany finish, with the light, cheerful tones greatly in predominance. Oil paintings by Herbert W. Faulkner of Washington, Conn., de-



Steamer Peter Stuyvesant Built by Pusey & Jones for the Hudson River Day Line



Observation Parlor on the Third Deck of the Peter Stuyvesant, Giving an Unobstructed View

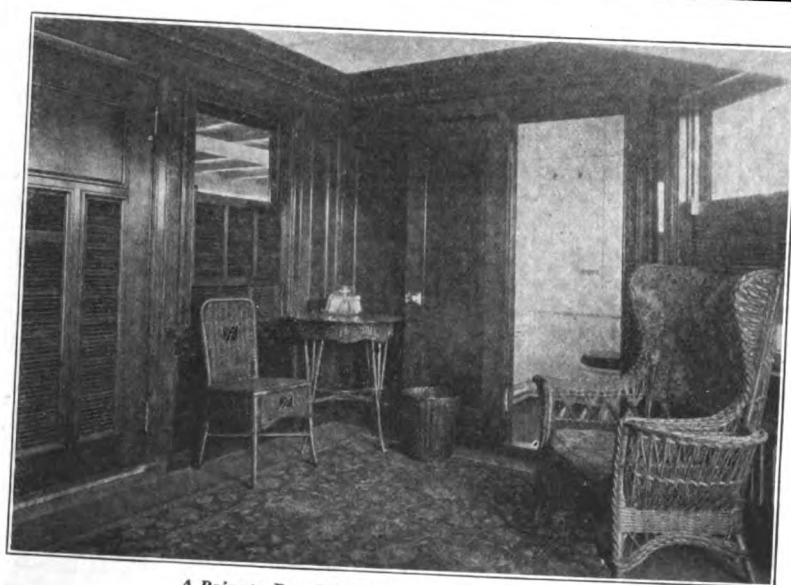
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 picting scenes from the life and times
 of the last Dutch Governor of New
 Amsterdam, add a touch of historic
 interest to the steamer's decoration.
 Mr. Faulkner's murals and other
 paintings are widely known to trav-
 elers on the Hudson, since they also
 adorn the Steamers ALEXANDER HAM-
 ILTON and DE WITT CLINTON of the
 Hudson River Day Line, where they
 have been admired by tens of thou-
 sands. Mechanical
 equipment of the
 new steamer in-
 cludes four Babcock
 & Wilcox water
 tube boilers of a
 total heating sur-
 face of 9064 square
 feet, and fitted with
 oil burners of the
 Peabody type. The
 boilers are arranged
 for forced draft.
 The main unit, by
 Pusey & Jones, is a
 four-cylinder, triple-
 expansion surface
 condensing engine,
 balanced on the Yar-
 row-Schlick-Tweedy
 system, of cylin-
 ders 25 x 40 x 47
 x 47 inches and 36-
 inch stroke, de-

signed to develop 2800 horsepower at 125 revolutions per minute.

Auxiliary equipment is complete
 and up-to-date. Windlass and steering
 engine are of the latest design by the
 Hyde Windlass Co. Miscellaneous ser-
 vice pumps were furnished by the
 Warren Steam Pump Co. Refrigeration
 is on the Frigidaire system. Current
 for lighting, electric motors and
 refrigeration is furnished by two 35-

kilowatt General Electric generators
 driven by Terry steam turbines and
 one 15-kilowatt General Electric auxil-
 iary generator driven by an Engberg
 single engine and located on the main
 deck. There is also a turbo pump fur-
 nished by Kearfott Engineering Co.
 and used for shifting water in the
 two side trimming tanks to maintain
 the vessel in upright position against
 a sudden or unusual shifting of

weight (passengers)
 on the decks. Light-
 ing and complete
 interior communica-
 tions were furnished
 by Chas. Cory and
 Son. The PETER
 STUYVESANT was
 named in honor of
 the last of the
 Dutch governors
 of the Colony of
 New Amsterdam, in
 keeping with the
 policy of the Day
 Line company to
 commemorate in its
 steamers the names
 of men distinguished
 in the history and
 development of New
 York and the na-
 tion. Among these
 steamers so named



A Private Day Parlor on the Peter Stuyvesant

are the HENDRICK HUDSON, ALEXANDER HAMILTON, ROBERT FULTON, DE WITT CLINTON and CHAUNCEY M. DEPEW. Described by many experienced travelers as the finest river steamers afloat, they are designed exclusively

for passenger carrying, and do not handle automobiles or other freight.

The PETER STUYVESANT is under command of Capt. A. Sickles, for twenty years in the Line, and former captain of the HENDRICK HUDSON.

pilot, and should detect any uncertainty or uneasiness on the part of the pilot more quickly than he might otherwise do. Also he will be kept constantly figuring out the consequences of an order on the movement of the ship, in relation to other ships, buoys, lights, etc.

Pilots Importance of Old Origin

It is not easy to account for the special importance of pilots in English waters, which even the jurists regard as anomalous, unless it be regarded as a reflection or projection of the position of pilots in ancient times. Pilots were licensed officials centuries before masters and mates were required to have certificates of competency or service. As early as the twelfth century there were laws governing the craft and mystery of pilotage or lademen as they were called then. Use of the word pilot in English did not come in until the sixteenth century.

In the early days the captain of a ship was usually a merchant or fighting man, while the lademan or pilot was the navigator, responsible for guiding the ship from port to port. And his responsibilities seem to have been onerous. The laws of Oleron decreed that "Ye mariners, if the lademan has failed in his duty to bring the ship to a successful conclusion of her voyage, may take him to the windlass and there cut off his head, and no one shall hold them to account therefor."

H. E. Huntington 1850-27

Henry Edwards Huntington one of the principal owners of the Newport News Shipbuilding & Drydock Co. and chairman of the board of directors died in Philadelphia May 23. He was born in Oneonta, N. Y., Feb. 27, 1850. His uncle Collis Potter Huntington was the founder of the famous shipyard at Newport News. Though his life's work lay principally in connection with the development of railroad property he was very much interested in the ship yard in which he was so heavily interested. One of the activities in which he displayed the greatest pride was the system of training apprentices.

Mr. Huntington trusted his employees and those whom he placed in authority. He was kind and gracious in his actions. He made decisions quickly and recognized that the creditable work of the yard was due to his employees. In his policies for the yard he adhered completely to the precept laid down by his uncle: "We shall build good ships here at a profit if we can—at a loss if we must—but always good ships."

A Pilot's Responsibility

By C. McKay

A STEAMER in the Canadian lake and river trade recently ran down a tug, causing the loss of several lives. The court of inquiry severely censured the second mate of the steamer who was on the bridge with the pilot at the time and suspended his ticket for a year, much to the young man's surprise. The pilot was also censured and his license suspended.

The second mate's evidence indicated that he was under a delusion that has wrecked the careers of not a few young ship officers. His view was that the presence of the pilot relieved him of direct responsibility for the safe navigation of the ship, that his duty was merely to see that the orders of the pilot were carried out. And his replies to questions showed that he was not paying much attention to the movements of the ship just prior to the accident.

It appears not to be as well known as it ought to be that the Canadian pilotage laws differ from those of England. Thus the organ of the Imperial merchant service guild usually criticizes a Canadian marine court when it declares an English officer jointly culpable with the pilot for accidents in Canadian waters, for under similar circumstances in British waters only the pilot might be censured.

Pilot Supreme in English Law

In English waters where it is compulsory for a ship to take a pilot he is regarded as having supreme control over her navigation, superseding the master for the time being. Judicial decisions have declared that the master and crew shall not interfere with the pilot's control and only remain liable for the proper execution of the pilot's orders and the efficient working of the ship.

The English law starts from the assumption that the pilot is a state official put aboard ship to assure the protection of lives, and not a servant of the shipowner. One consequence of this is that the owner or master are not responsible for damage caused

by the fault or incapacity of the pilot acting in charge of the ship in waters where pilotage is compulsory.

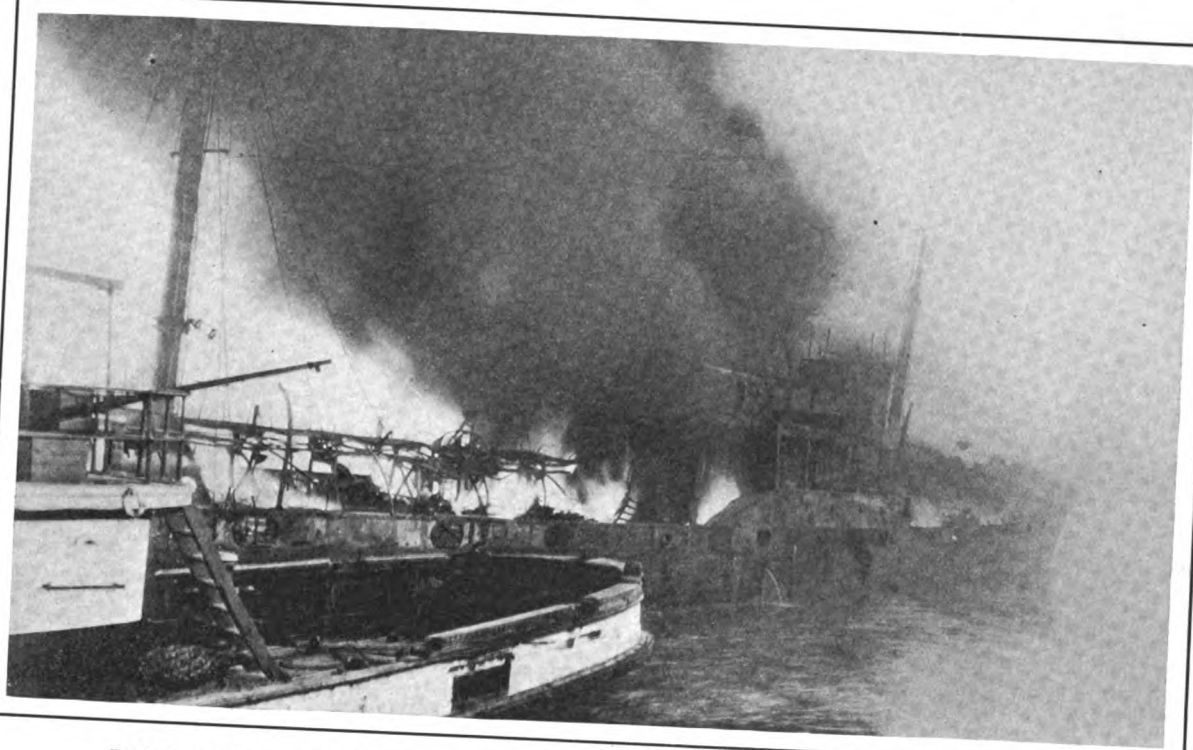
In Canada the supreme pilotage authority is vested in the minister of marine, and, in a sense, pilots are servants of the state, in that they are subject to the orders and regulations made by the minister or his agents. But contrary to the English practice, Canadian law regards the pilot when in employment as the servant of the shipowner. He goes aboard ship as an advisor to the master, a sort of living chart. The master's authority in Canadian waters is therefore always supreme. If the pilot's instructions involve a departure from the practices of safe navigation, and result in an accident, the master or his watch officer may be found jointly culpable with the pilot, and the shipowner may be held liable for damages.

Officers Assume Responsibility

This is the code of nearly all countries except, England, and even in English waters the master is bound to interfere if the pilot is intoxicated or manifestly incompetent. And where this code prevails the responsibility of the master and his officers never ceases, and the wreck courts are usually ruthless toward aberrations from the principle that eternal vigilance is the price of safety.

The Canadian courts show no mercy to an officer who at an inquiry is shown to have been careless, or to have had a doubt in his mind which he did not at once attempt to resolve by bringing it to the attention of the master and pilot, calling the master to the bridge if not there.

Some masters in Canadian waters, who lack confidence in the watchfulness of their officers, tell the pilot to address his orders to the watch officers, he being required to repeat them to the man at the wheel. This is supposed to keep the officer's attention keyed-up to the proper pitch. He has to pay constant heed to the



Explosion and Fire—Dutch Tanker *Silvanus* After Collision 40 Miles Below New Orleans, April 8, 1926

Rebuild Wrecked Tanker in Gulf Coast Shipyard

By Ben Sykes Woodhead

ON May 31, the Petroleum Navigation Co.'s tanker, PAPOOSE, formerly the Dutch tanker *SILVANUS*, was christened at the plant of the Pennsylvania Shipyards, Inc., on the Neches river, Beaumont, Texas, where a half million dollar repair job on the vessel had just been completed. Her virtual rebuilding was the largest ship reconstruction job ever undertaken on the Gulf coast, and a number of officials of the Petroleum Navigation Co. as well as prominent Beaumont citizens, were invited to the christening ceremonies.

It was hardly more than a year ago—April 8, 1926—that the *SILVANUS*, forty miles below New Orleans, traveling at full speed and loaded with a cargo of benzine and fuel oil, collided with the Standard Oil tanker *THOMAS H. WHEELER*. The steel plates on the port bow of the *SILVANUS* were buckled, generating sparks which ignited the benzine, and a terrible explosion followed. Twenty-six members of the crew of the *SILVANUS* lost their lives.

In addition to the direct damage caused by the collision, the *SILVANUS* suffered severely from the fire which swept over her decks at the time of the explosion. All the super-structure was burned away, while most of the decking and the deck beams were partially destroyed.

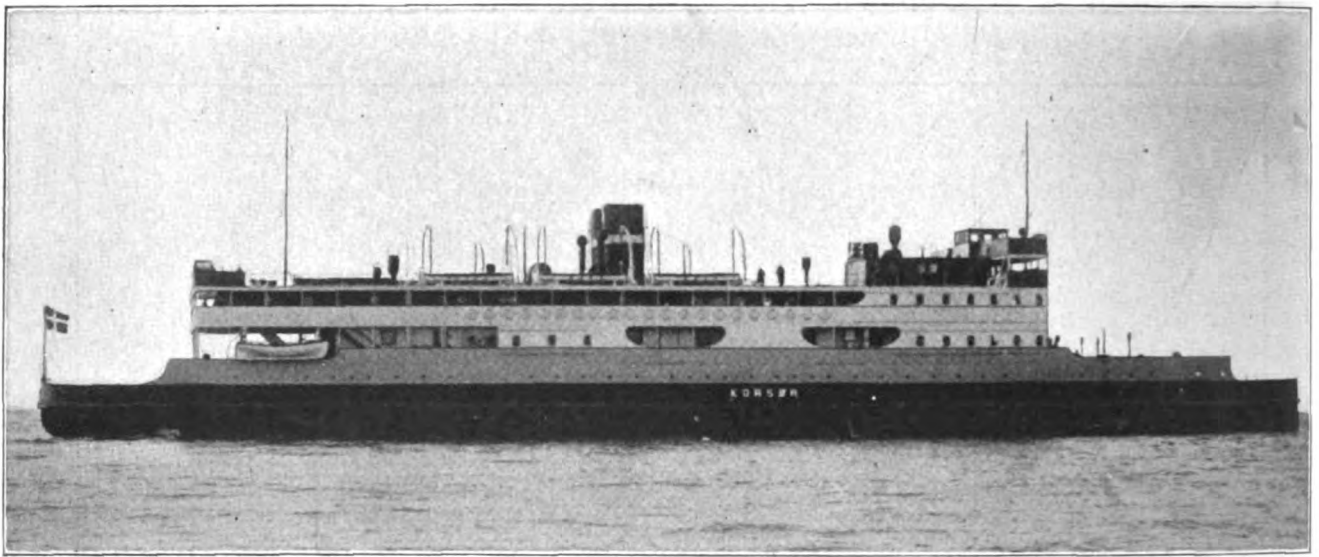
It looked as if the tanker's days were numbered, and many marine authorities were of the opinion that the vessel might be regarded as a total loss. She passed into the hands of her underwriters, but there were a number of claims against her, and finally, after reconstruction bids had been asked for, she was sold to the Petroleum Navigation Co. On Oct. 29 she was towed up the Neches river to the island on which the plant of the Pennsylvania Shipyards, Inc., is located.

Shortly afterward three hundred workmen were assigned to the task of rehabilitating the wrecked *SILVANUS*, and by working steadily for six months, according to a program of specifications in which no expense was spared, they succeeded in making the mangled vessel—now the *PAPOOSE*—one of the finest tankers afloat. There are other similar ships that may boast greater length or tonnage but there are none that are more handsomely furnished, none that can reveal more modern equipment in the officers' or crew's quarters.

The *PAPOOSE* is 427 feet long overall, or 412 feet long between perpendiculars, and the beam, molded, is 53 feet 1 inch. Her loaded draft is 24 feet 7 inches and she has a speed of 11 knots. The capacity of the main tanks is 7478 tons, or 60,000 barrels, and of the wing tanks 874 tons or 7000 barrels. Four lifeboats, each capable of accommodating 31 persons,

(Continued on Page 50)

MARINE REVIEW—July, 1927



Recently completed twin screw Danish carferry KORSOR, for the Great Belt Service

Diesel Drive Used in Carferry

New Twin Screw Danish Ferry Korsor Between Zealand and Fyen—
Largest Combined Passenger, Rail Car and Automobile Ferry

THE recently completed Danish twin screw diesel carferry KORSOR successfully passed her trial trip on May 7. This unique ferry shown in accompanying illustrations was built by the Elsinore Shipbuilding Co. and engined by Burmeister & Wain, Copenhagen. On the trials careful observations were made of revolutions, horsepower and speed. The results are plotted in the diagram below. At the greatest speed

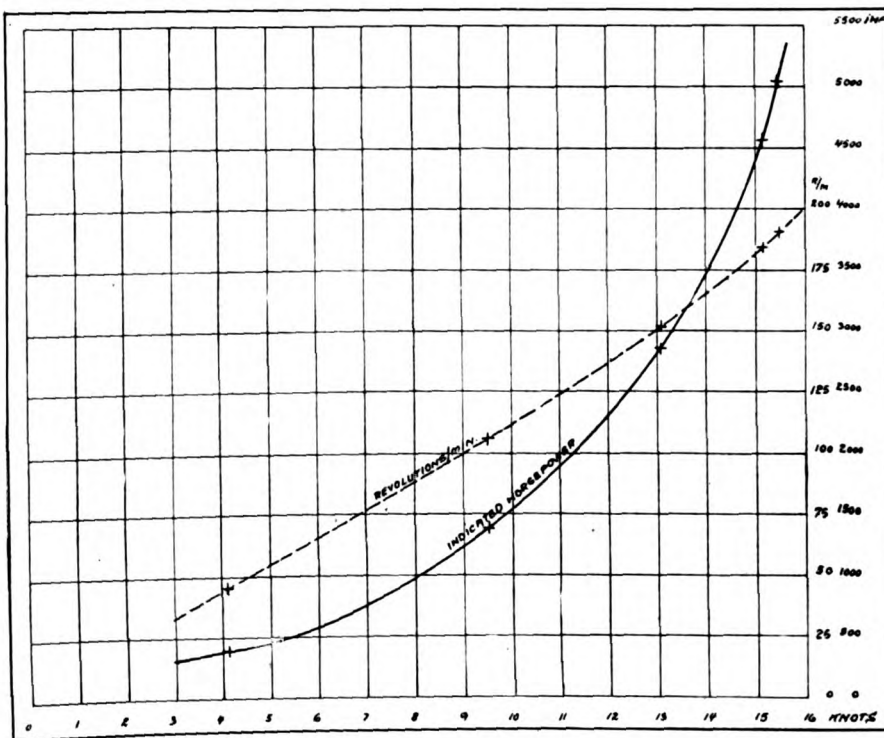
which was 15.51 knots the main engines developed about 5100 indicated horsepower at 191 revolutions per minute. After the trial trip a return was made to the shipyard at Elsinore for a few final touches.

The KORSOR left Elsinore to enter service on May 13. On the way a trial was held to determine the fuel consumption. It was found that with the two main engines developing a total of 3620 indicated horsepower, the

consumption per indicated horsepower per hour was .312 pounds (141.5 grams) of fuel oil. This trial lasted for four hours. The speed of the engines was then increased and for two hours the vessel was run with the main engines developing a total of 4160 indicated horsepower with a fuel consumption of .314 pounds (142.1 grams) per indicated horsepower per hour. The necessary maneuvering in and out of the jetties demonstrated the complete flexibility of the two direct connected diesel engines which provide the motive power.

Vibration Has Been Eliminated

There is no doubt that the builders of the engines were much pleased at the chance to furnish this type of power for a vessel of such unique and special service. A good deal of skepticism existed in the minds of the designers, owners and shipbuilders regarding the suitability of internal combustion engines for a vessel in this service not only on account of the question of maneuvering but also because passengers are carried during day and night and also sleeping cars. It was feared that vibration might be of annoying proportions. These conditions were accepted and every precaution was taken in designing the hull and machinery to prevent vibration. Calculations of the most thorough nature were carried out by the technical staff of the engine builder. It was found that the structure of the engines had to coincide



POWER REVOLUTIONS AND SPEED CURVE DIESEL CARFERRY KORSOR

with the hull structure. At any rate the hull and engines were designed and constructed as indicated by these calculations and the result, according to reports of the trials held, show complete freedom from vibration. This is a most important matter and it would be well if the results of the study made could be fully published.

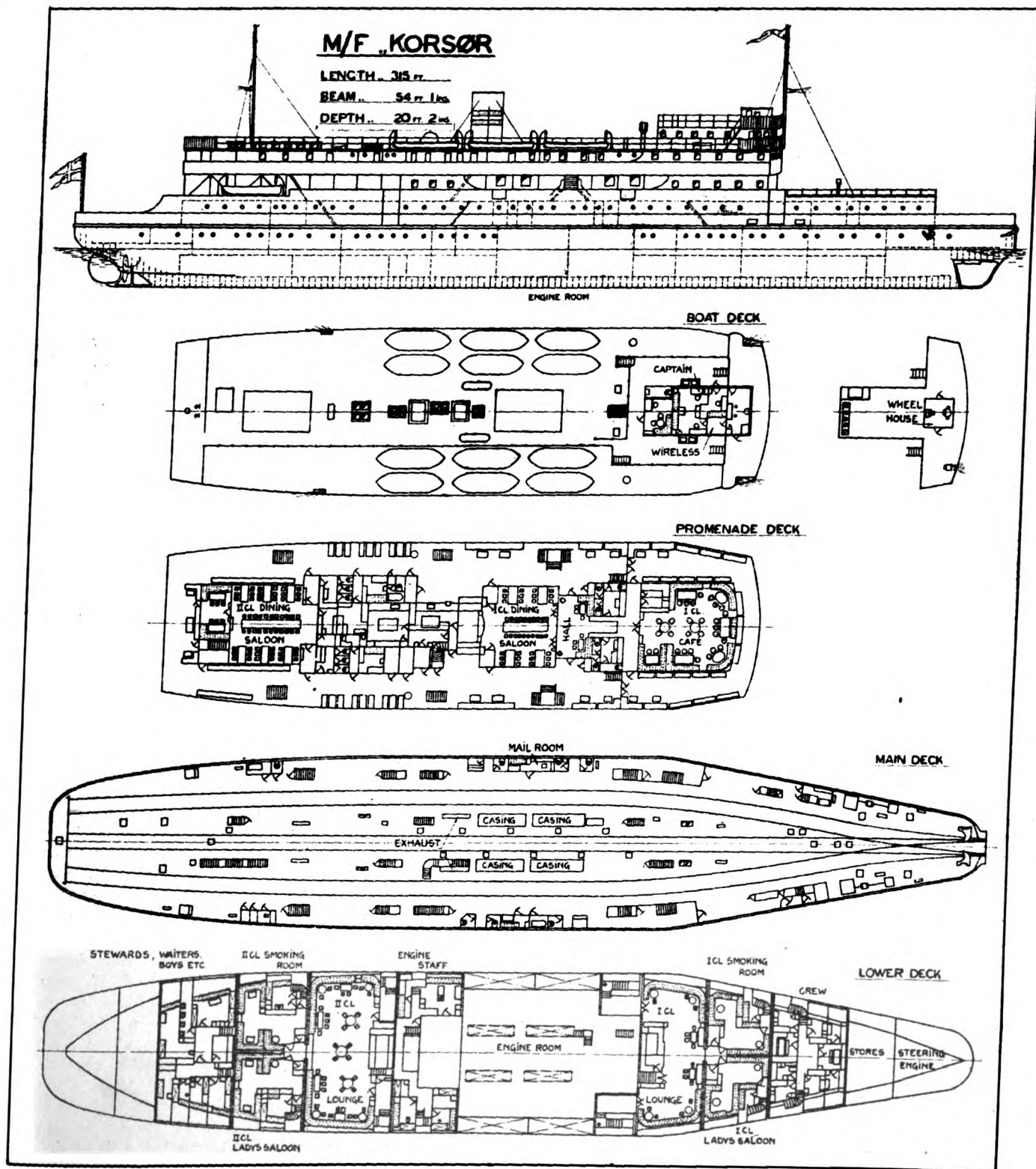
The KORSOR has gone into service as a combined passenger, railway car and automobile ferry across the Great Belt between Zealand and Fyen. This

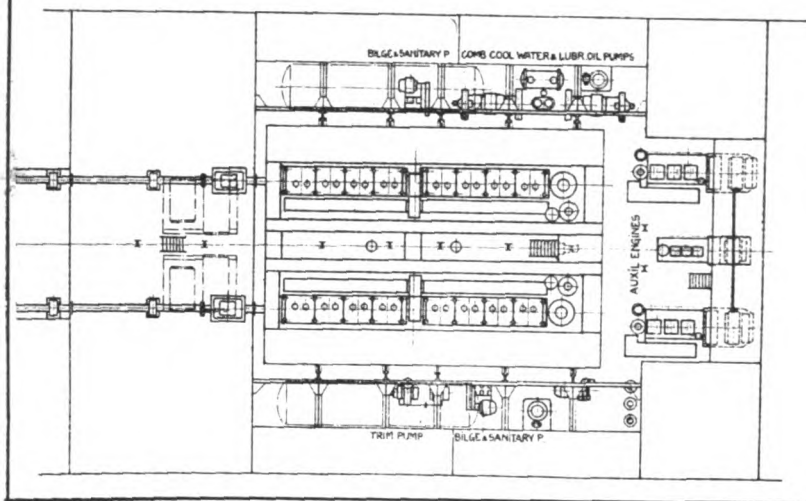
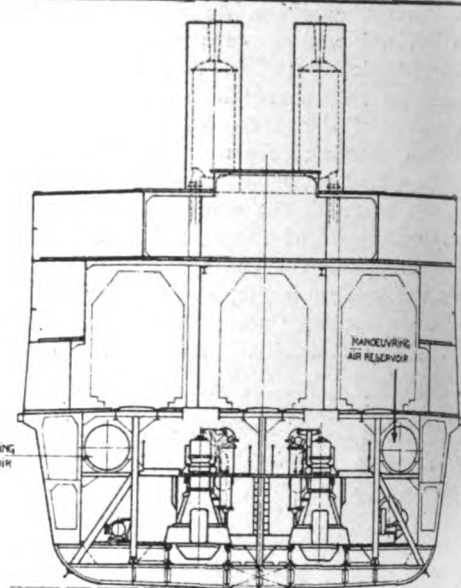
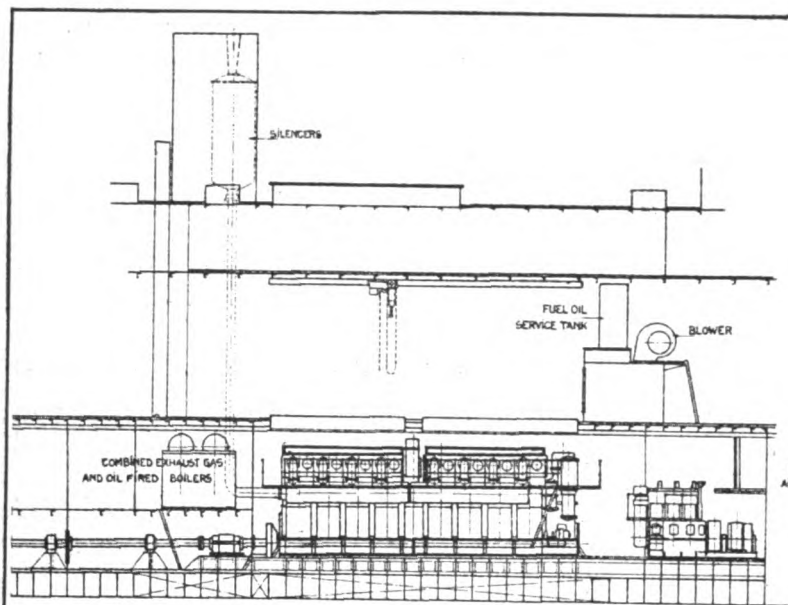
crossing is a very difficult one and it is necessary to have utmost dependability in the main machinery. There is a strong current running across the passage into the jetty at Korsor harbor and it is necessary to maintain practically full power in order to make steerage way.

Ferry Route Has Grown

It is interesting to note that the ferry route on which the KORSOR now operates was opened in 1883 when

132,492 passengers and 13,482 tons of freight were transported. This route developed rapidly so that in 1920-21, 947,500 passengers were carried and in the year 1915-16, 1,219,698 tons of freight was transported. The first ferries were of paddle-wheel type with double track rails having a total length of 400 feet. In the next addition to the fleet the total length of rails was increased to 450 feet. The next step taken was the change from paddle to screw increasing the rail





SECTION THROUGH ENGINE ROOM

ELEVATION AND PLAN OF ENGINE ROOM LAYOUT IN DIESEL CARFERRY KORSOR

trackage length to 468 feet. Now comes the latest addition in the introduction of the diesel propelled car-ferry KORSOR with three sets of rails with a total length in effective trackage of 787 feet.

Each of the ferries on the route make ten to twelve trips daily at about $1\frac{1}{2}$ hours duration which means about eighteen hours at sea in a continuous twenty-four hour service. The 70 per cent increase in available length of rails for accommodating cars was made possible in the KORSOR, which on account of the old jetties is built to practically the same dimensions as existing ferries, by the adoption of diesel engine drive. It is also plain that the operating expenses will be less than for smaller capacity steam ferries, that the new vessel will be cleaner, and that it is immediately ready at all times to put to sea without the necessity of maintaining banked fires. Passengers, it is claimed, are much better off on

the KORSOR as all accommodations are more spacious, amounting to 25 per cent with the slightly increased dimensions.

The KORSOR is 315 feet in length and 58 feet in breadth amidship's over fenders; the depth is 20 feet 3 inches and the draft is 13 feet 1 inch. The hull is built of steel to the rules of the Bureau Veritas with a flush main deck carrying three sets of tracks recessed into the wooden deck in order to make it smooth going for automobiles which are also being carried in addition to railway cars and passengers.

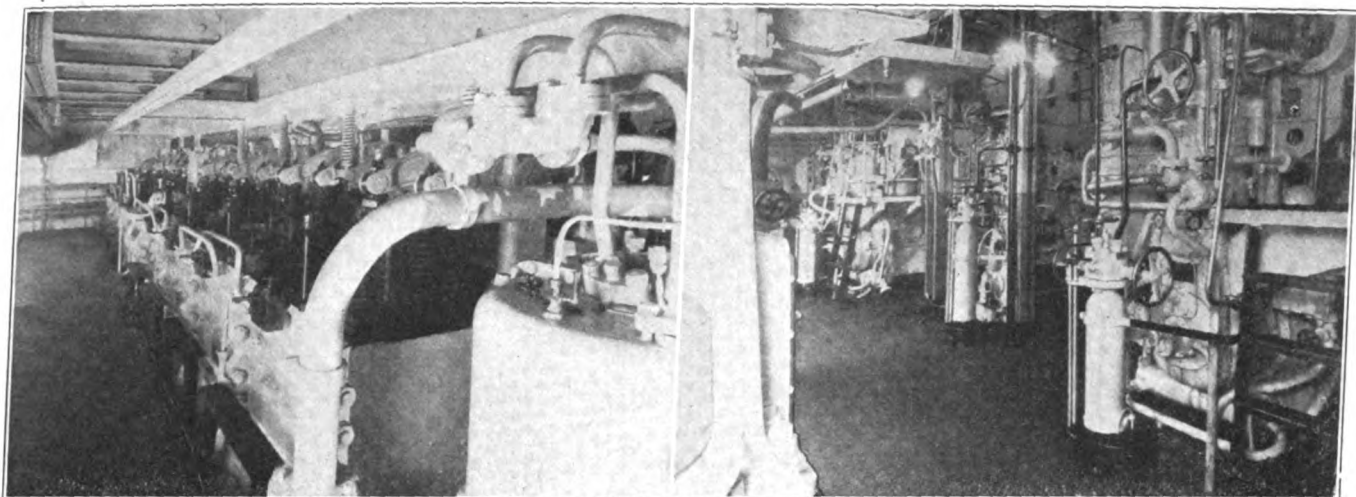
Roomy accommodations are fitted on the lower deck fore and aft of the engine room. Above the main deck is a promenade deck 197 feet long covering the full width of the vessel. A certificate has been given the KORSOR to carry a car load of 500 tons and 1500 passengers. The running speed is $15\frac{1}{2}$ knots.

The propelling machinery consists

of two, 8 cylinder, 4 cycle, single acting, force lubricated, direct reversible, trunk piston, diesel engines of special ferry type built by Burmeister and Wain. The two engines in the KORSOR were designed as starboard and port engines with valve and maneuvering gear facing. The two engines together developed 4000 indicated horsepower at 180 revolutions per minute. They are fitted with governors of B. & W. type so that they can run evenly at 45 revolutions per minute. These engines have been very carefully built and the design is intended to give maximum strength. Cylinders are fitted with separate cooling water jackets. Cast steel levers actuate the valves. The cam shaft which actuates the valve levers may be moved longitudinally, while turning, for ahead or astern position. The reversing gear is worked by compressed air used in a rotating gear motor with an oil brake. Each main engine is fitted with an air compressor of the three stage type bolted to the forward end and worked directly from a crank.

Auxiliary Machinery

Two, three-cylinder 150 brake horsepower Burmeister & Wain diesel engines running at 400 revolutions per minute are installed each driving a 100-kilowatt dynamo. There is also one three cylinder 75 brake horsepower diesel engine of B. & W. type running at 500 revolutions per minute directly coupled to a 50-kilowatt dynamo. Each of the above generating sets are also directly coupled to a compressor of the three stage type of B. & W. patented design which allows the output to be automatically adjusted to meet the demand.



ENGINE ROOM CARFERRY KORSOR. AT LEFT—TOP VIEW OF MAIN ENGINES. AT RIGHT—AUXILIARY DIESEL ENGINES

The pumping plant is located at the back platform of the main engine alongside the wing tanks. Two duplicate tanks are fitted for the cooling water and lubricating oil services. Each of these plants are made up of an electric motor driving on the one side an 80-ton centrifugal pump for water supply, and on the other side a 60-ton geared wheel pump for lubrication. Two electric driven pumps of geared wheel type are used for handling the fuel oil and two sets of electric driven twin plunger type of pumps take care of the bilge and sanitary service.

Heating and Auxiliary Boilers

Aft of the main engine room in a separate boiler room there is installed two duplicate sets of so called combined boilers designed for a working pressure of about 100 pounds. These boilers are arranged for burning oil as well as the utilization of the exhaust gases from the main engines and are used for heating all living quarters of the vessel and the railway cars on board. The boilers are of the water tube type and have an upper and lower drum connected by vertical tubes.

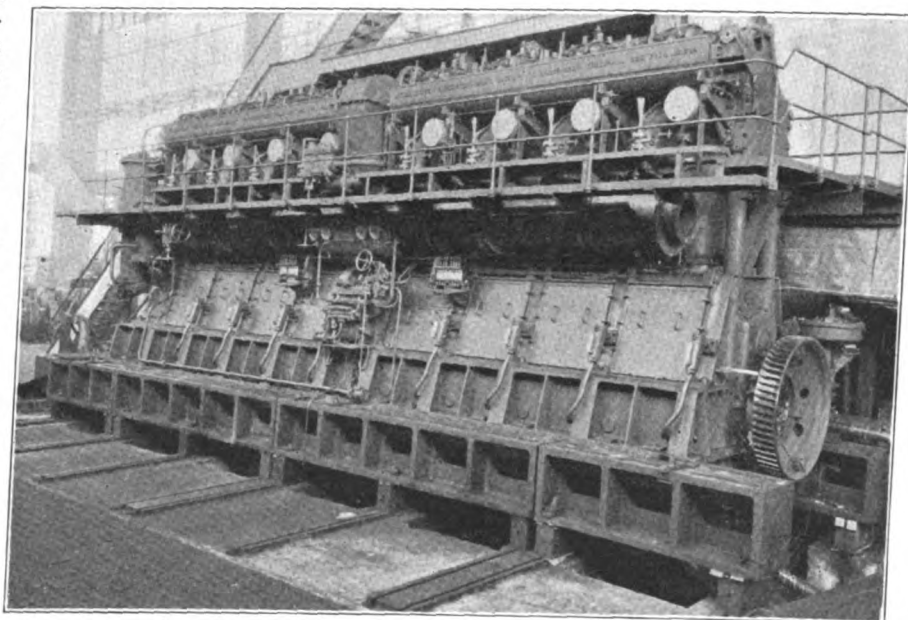
Before the exhaust gases are admitted the boilers are thoroughly heated by setting off the oil burners in order to prevent the formation of sulphuric acid as a result of condensation should the exhaust gases from the diesel engines come into contact with the cold surfaces inside the boiler. The oil burners are also intended to augment the exhaust gases in making steam during exceptionally cold periods. During the warm periods of the year the exhaust gases are by passed and do not go through the boilers. The exhaust gases and the products of combustion of the oil burners are completely separated in these com-

bined boilers to prevent a possible explosion in changing over from exhaust gas to oil firing. The two boilers are connected by three pipes, for steam, hot and cold water respectively, and thus excellent circulation is obtained while raising steam. During the trial it was found that each boiler evaporated about 1320 pounds of steam while the temperature of the gases were reduced about 480 degrees Fahr. in the boiler. The steam produced proved to be ample for all requirements. The exhaust boiler acts at the same time as a silencer and the absence of noise was noticeable. The back pressure due to exhausting into the boilers was considerably reduced for the benefit of the power in the main engines.

Living quarters are fitted on the Korsor for first, second and third class passengers. These quarters are

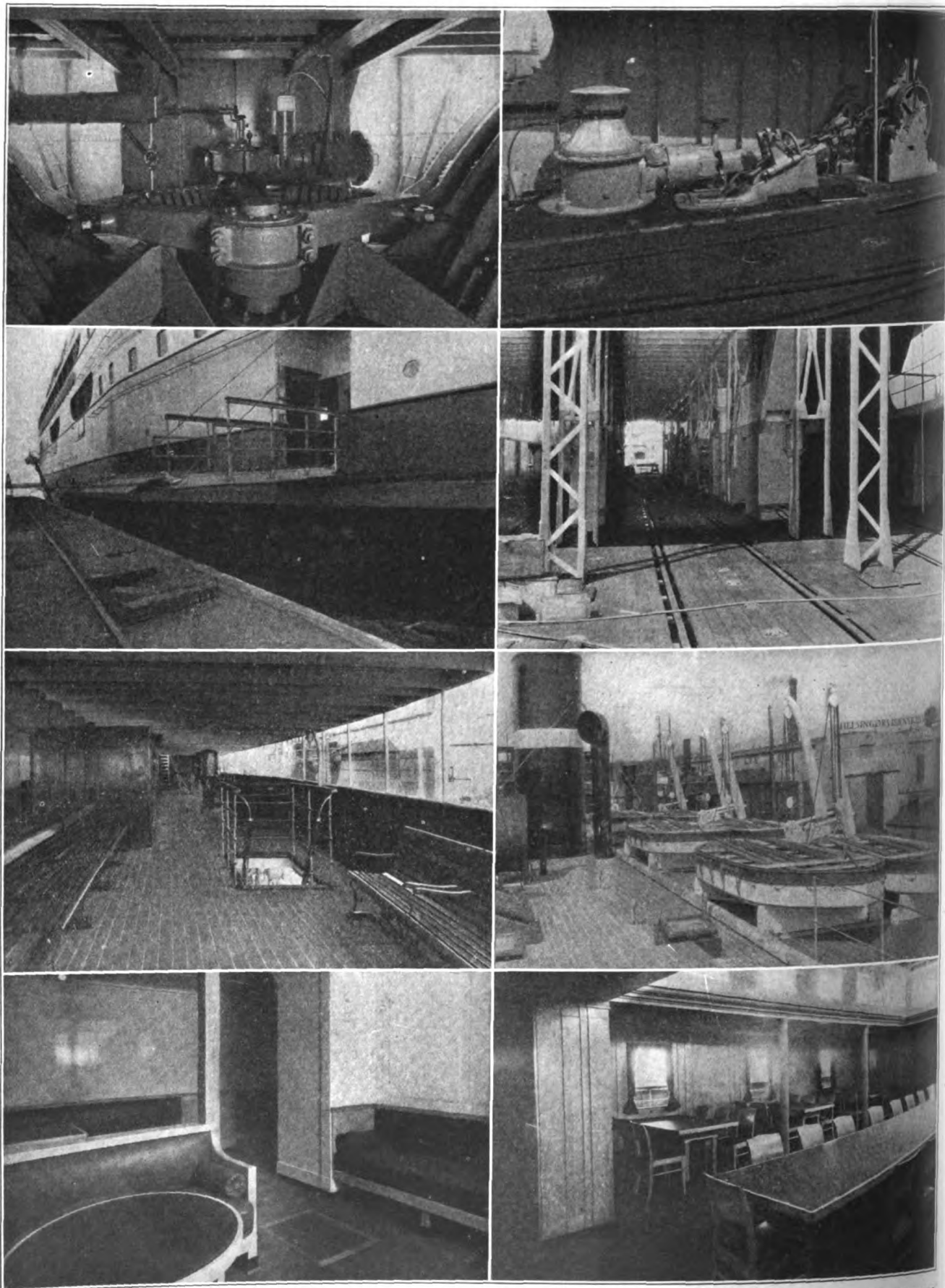
arranged on the promenade deck, the forward part of which affords perfect shelter as it is entirely enclosed and is fitted with large square windows. The sides and seats are neatly finished in light elm.

The first class smoking room and restaurant are located centrally on the forward part of the promenade deck. These spaces are finished in dark polished mahogany and are fitted with comfortable chairs and lounges covered with leather. The first class dining room is reached by way of an entrance fitted with baggage racks and a hall finished in stained dark mahogany, through swinging doors with beveled plate glass. It is paneled in light polished birch inlaid with black. The galley is located aft of the dining room and is equipped with an oil fired range and percolators. There is also a pantry and pro-

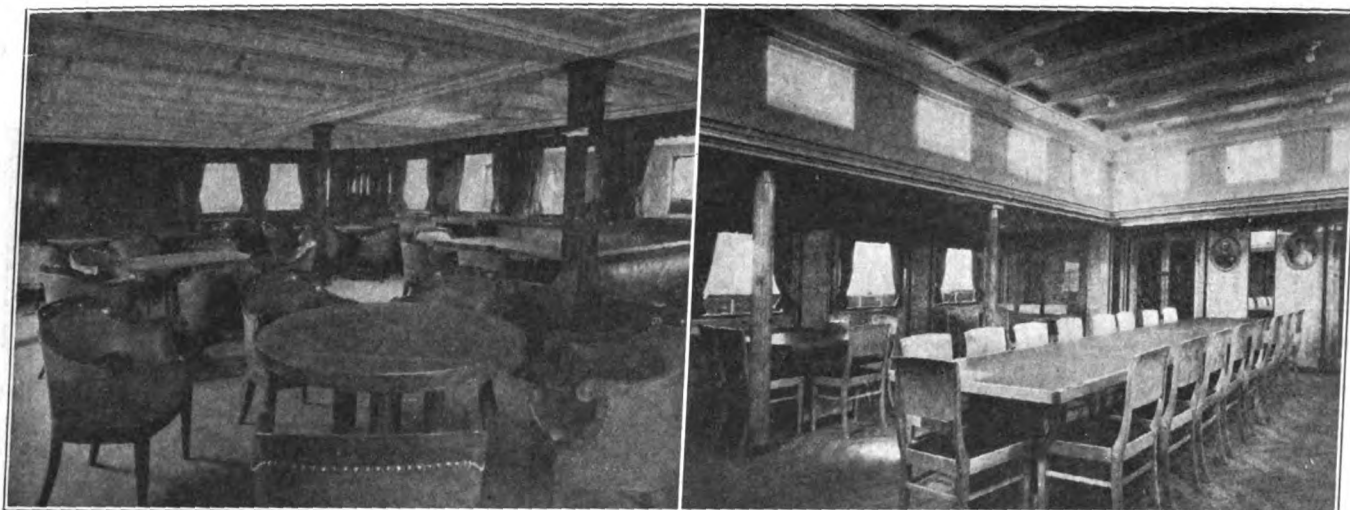


SPECIAL FERRY TYPE BURMEISTER & WAIN 8-CYLINDER, 4-CYCLE, SINGLE-ACTING DIESEL ENGINE ON TEST BED—TWO OF THESE ENGINES ARE INSTALLED IN THE CARFERRY KORSOR

Twin Screw Diesel Carferry Korsor



VIEWS OF THE DANISH TWIN SCREW DIESEL CARFERRY KORSOR. UPPER LEFT—STEERING GEAR ELECTRIC DRIVEN. UPPER RIGHT—COMBINED WINDLASS AND WARPING WINCH. NEXT BELOW—LEFT—AUTOMATIC GANGWAY WHICH SERVES AS DOOR WHEN UP IN PLACE. NEXT BELOW—RIGHT—MAIN DECK SHOWING THE THREE FLUSH TRACKS. NEXT BELOW—LEFT—PROMENADE DECK. NEXT BELOW—RIGHT—BOAT DECK LOOKING FORWARD. LOWER LEFT—THIRD CLASS MEN'S COMPARTMENT. LOWER RIGHT—THIRD CLASS DINING SALOON



ACCOMMODATIONS CARFERRY KORSOR. AT LEFT—FIRST AND SECOND CLASS SMOKING ROOM. AT RIGHT—FIRST AND SECOND CLASS DINING SALOON

vision store room having a cold chamber with an electrically driven refrigerator.

At the end of the promenade deck is located the third class restaurant which is finished in light oak. It is connected with a lounge for non-smokers. This lounge is finished in elm. Aft of the deck houses there is a veranda fitted with comfortable seats. Above the promenade deck the lightly constructed boat deck serves to house a navigating bridge at either end, also steering room and quarters for two captains, wireless operator and a room for officials.

Under the main deck forward and aft of the machinery space are arranged tastefully furnished and spacious saloons for first, second and third class passengers. There is a social hall with buffet paneled in polished birch and stained elm, respectively. There are also separate ladies' and gentlemen's compartments in white enamel. The buffets of the saloon are connected with the restaurant on the promenade deck by means of

hoists to facilitate direct service.

There is a wing deck at the side of the vessel between the main and promenade deck. Throughout the accommodations are fitted a number of fully equipped lavatories in white enamel, with porcelain hand basins, large plate glass mirrors and decorative tile floors. Ventilation throughout an electrically driven centrifugal fan.

Officers' and crews' quarters are located partly on the promenade deck and partly under the main deck amidships and also fore and aft.

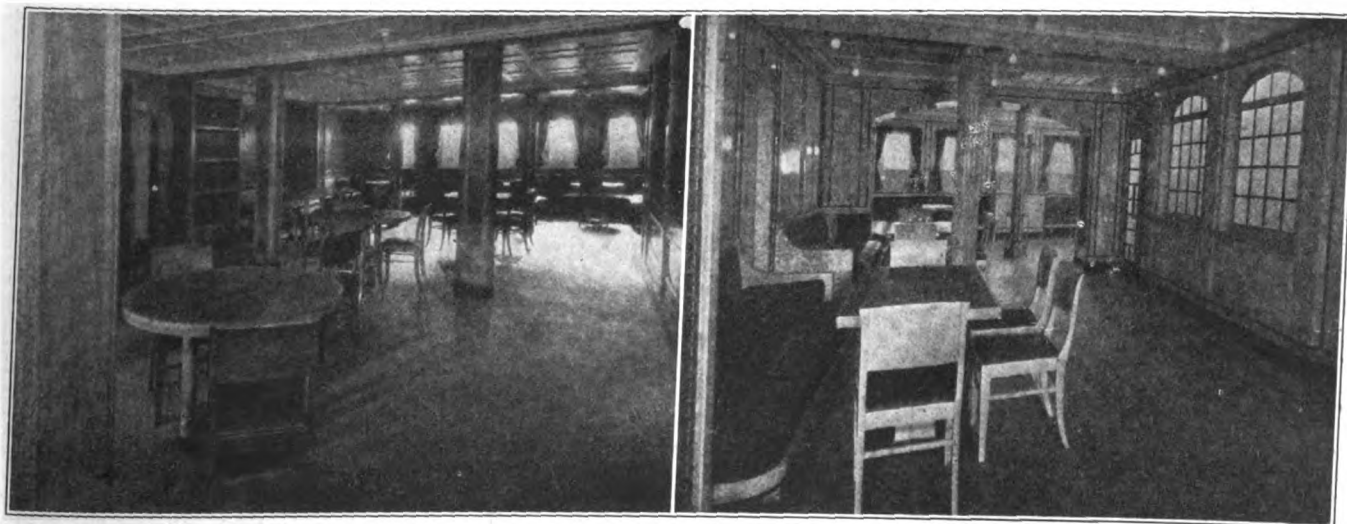
Two doors of steel plating, one on either side on the main deck and hinged to lower by means of electric winches or hand power, serve, when down, as a gangway for passengers.

There is a system of four trimming tanks with a total capacity of 400 tons and four wing tanks holding 160 tons. These tanks are arranged so that the water can be quickly transferred from one to another by means of a large electrically driven vertical centrifugal pump. By being able to trim the

vessel in this manner it is possible to load the railway cars quickly and with safety. In addition to the trimming tanks there are two deep tanks for fuel oil and a double bottom tank for lubricating oil, as well as the necessary tanks and pumps for fresh water.

The KORSOR is so well sub-divided by watertight bulkheads that calculations indicate that the vessel will continue to float with two adjoining compartments filled with water. Life saving appliances consist of Engelhardt collapsible boats on the boat deck under mechanical davits, two dinghies on the wing deck aft, life buoys, and life belts in accordance with requirements.

All of the deck machinery is electrically driven. There are two windlasses with anchors and 1½ - inch chain cable, four warping winches for a load of 5 tons, four gangway winches for a load of one ton, and two steering machines, one forward and one aft. The winches and the steering gear are made by Thomas B. Thrige, Odense, Denmark.



ACCOMMODATIONS CARFERRY KORSOR. AT LEFT—THIRD CLASS LOUNGE. AT RIGHT—FIRST AND SECOND CLASS LOUNGE

Late Decisions in Maritime Law

Legal Tips for Shipowners and Officers

Specially Compiled for *Marine Review*

By Harry Bowne Skillman

Attorney at Law

THE duty of making a ship seaworthy is nondelegable; hence a steamship company could not successfully defend a libel by a shipper for damage to cargo on the ground that it had made a contract with a shipbuilding corporation to make repairs unless it could also show that the corporation had performed its contract.—*Bethlehem Shipbuilding Corp., Ltd., v. Joseph Gutrad Co.*, 10 F. (2d) 769.

IN HOLDING that private wharf owners offering their wharves to the public generally are not entitled to recover wharfage at a rate greater than the statutory rate, the court, in the case of *M. L. C. No. 10*, 10 F. (2d) 699, said: "If a wharf owner offers his conveniences to the public, if for a uniform price of his own fixing he offers service to all, he is in effect a public servant, and his wharf public. He cannot have his cake and eat it, nor behave like a public wharfinger, yet remain immune from that regulation which admittedly affects owners of public wharves, and which we hold affects all wharves offered to the public."

RECITAL in bill of lading for codfish, "In apparent good order and condition," does not necessarily mean that the cases contained sound codfish properly cured for a sea voyage in the summer, it was held in the case of *MUSKEGON*, 10 F. (2d) 817. It was further decided that a ship sailing with cargo, after her master had filed her manifest, without issuing other bills of lading, ratified and adopted bills signed by the company for which the charterers had contracted to transport goods.

WHEN their ship is in port, seamen cannot be held in involuntary servitude.—*Elman v. Moller*, 11 F. (2d) 55.

THE managing officer of the owner of a vessel, on being informed by radio that a tug was assisting the vessel, not having disavowed the services, but having allowed the tug to continue, the vessel was liable for towage, said the court in the case of *TRINIDAD*, 10 F. (2d) 849, notwithstanding a previous notice that the tug's services would not be required.

THE general rule***, it was stated in the case of *CAPITAINE FAURE*, 10 F. (2d) 950, "is that the master of a ship has no power to bind the owners of the ship by a false bill of lading.***if a master signs a bill of lading which is false,

and the goods at no time have been received on board, the ship is not bound. The bill of lading is void in such cases, even in the hands of a bona fide holder for value." It was also held that the master cannot bind the ship by signing a second bill of lading for goods on board, for which he has already signed one bill.

THE fact of seaworthiness of ships for the service undertaken is presumed in the absence of a showing to the contrary, and when shipowners contemplate the release of their vessels from liability, as effects the implied warranty of seaworthiness for the service undertaken, they should do so in plain and unequivocal terms.—*Dempsey v. Downing*, 11 F. (2d) 15.

A SHIP and its owner were chargeable with a duty to a night watchman to use proper diligence to provide a safe place for him to do his work, and were liable to indemnify him for injuries received in consequence of a failure to supply and keep in order proper appliances appurtenant to the ship, the lack of which rendered unsafe the watchman's place of work.—*VALDARNO*, 11 F. (2d) 35.

NEGLIGENCE of a carrier is not actionable unless it caused the damage. If it did, it is actionable and the carrier is not relieved from liability for its wrongful act. If, however, declared the court in *THOMAS P. BEAL*, 11 F. (2d) 49, the shipper caused the damage by supplying defective containers, the carrier, though negligent, is not liable for the consequences of the shipper's act. Liability therefore must be determined according as the damage is traced to the action of one party or the other party and found to be the result of the negligence of one or the other.

THE obligations imposed upon those rendering services and furnishing supplies to ships to exercise reasonable diligence to ascertain the limitation of authority, if any, of those in possession of the same, implies that had inquiry been made, information would have been afforded of such limitation, and it does not contemplate, although there may be some circumstances that might put them on inquiry, that they should be obliged to conduct an investigation into facts often complicated, sometimes requiring judicial determination for their final determination, and to decide at his peril whether a lien was possible or not.—*Virginia Shipbuilding Corp. v. United States*

Shipping Board Emergency Fleet Corp. 11 F. (2d) 156.

IN ORDER that governmental restraint (in this case, fuel administrator's order) shall excuse performance of his contract on the part of the charterer, the restraint must have been the proximate or distinguished from the remote cause of such failure.—*Berwind-White Coal Mining Co. v. Solleveld, Van Der Meer & T. H. Van Hattum's Stoonvaart Maatschappij*, 11 F. (2d) 80.

THE owner of a vessel cannot be held liable because the charterer, for his own purposes, made misrepresentations as to its authority.—*GUL DJEMAL*, 11 F. (2d) 153.

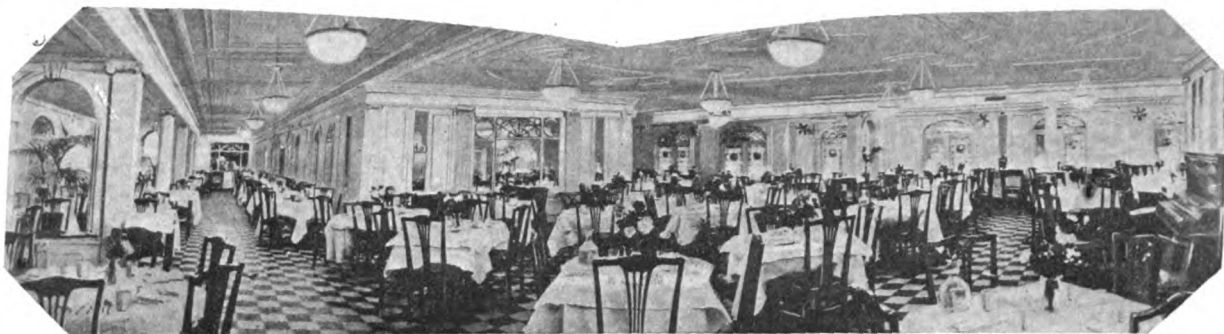
WHERE the charterers of a vessel advertised for freight, which was received and receipted for by a forwarding company, employed by the charterer, and stored on deck, but never placed in the vessel's hold, though bills of lading were issued by the charterer, there was no actual delivery to the vessel; and no lien exists against a vessel for loss of merchandise not delivered to it.—*ARABIAN*, 11 F. (2d) 304.

ONE whose ship is wrongfully injured, as against the wrongdoer, may liquidate his damages by expert testimony alone, and never repair at all, and the making of temporary repairs does not preclude a libellant from recovering cost of permanent repairs.—*Pennsylvania Railroad Co. v. Downer Towing Corp.* 11 F. (2d) 466.

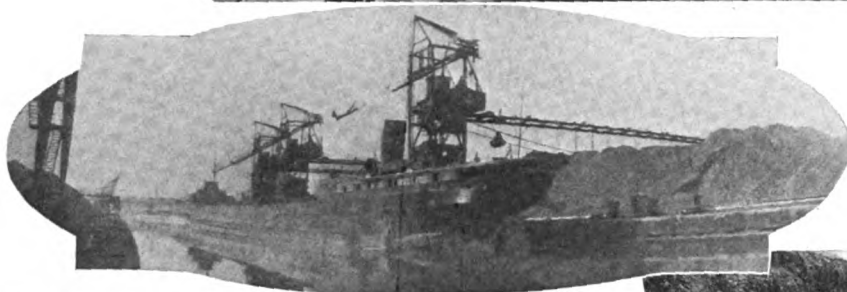
IT DID not constitute negligence or improper towage to place a scow where she would lie on an even and soft mud bottom, free from rocks or bars, when the tide was at ebb. The tug's duty was to take the scow as near to the dock as she safely could, and there was no obligation to stand by.—*Schoonmaker-Conners Co. Inc., v. New York Tidewater Gravel Corp.*, 11 F. (2d) 470.

WE REJECT," said the court in the case of *Scottish Navigation Co. Ltd., v. Munson Steamship line*, 10 F. (2d) 708, "the idea that, because the charter party limited the required capacity of the ship's gear to three tons, there was a corresponding limitation on the mast strength. Such a mast literally would not hold itself up in heavy weather. The owner was bound to furnish a mast reasonably strong for the contemplated ship's purposes."

Latest Marine Events in Pictures



Above—Dining room of the H. F. Alexander, de luxe and speedy passenger liner of the Pacific Steamship Co. operating between Seattle, San Francisco and Los Angeles

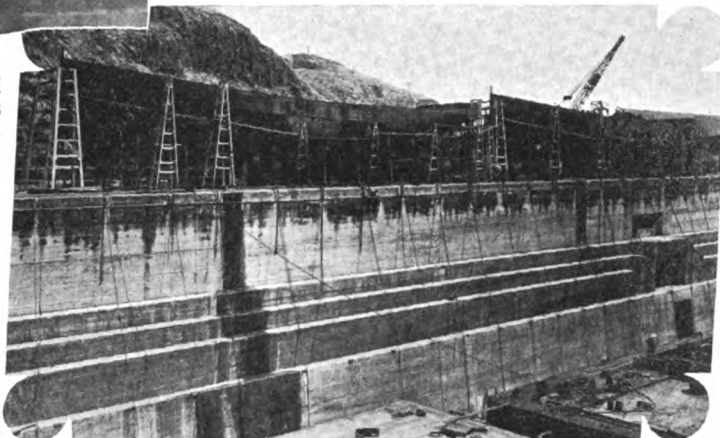


At Left—Freighter J. H. Sheadle, Cleveland Cliffs Iron Co., alongside the coal docks in the Kinnickinnic river, Milwaukee



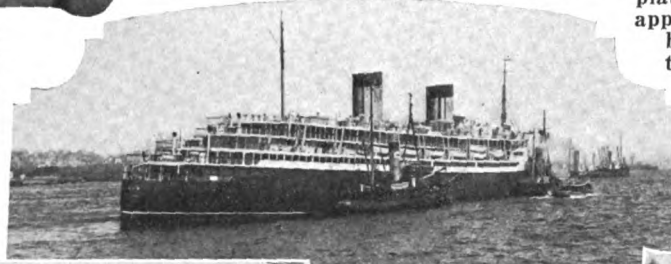
At Right—Powerful diesel electric tugs Chagres and Trinidad building on top side of the 1000-foot drydock at Balboa, C. Z. See story in June Marine Review

At Left—Clifford W. Smith, assistant director of the New York district for the Fleet Corp.
Photo by Marceau

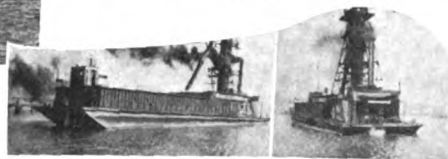


Below—S. S. Malolo towed into New York harbor after being rammed on May 25 off Nantucket Lightship in a dense fog by the Norwegian freighter Jacob Christensen. Struck on the port side at the bulkhead between her two boiler rooms, her plating was ripped below the water line approximately 25 feet fore and aft. Both boiler compartments were flooded but the automatic watertight bulkhead doors confined the water to this space and saved the ship

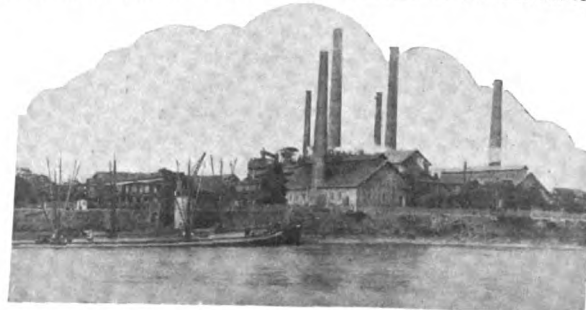
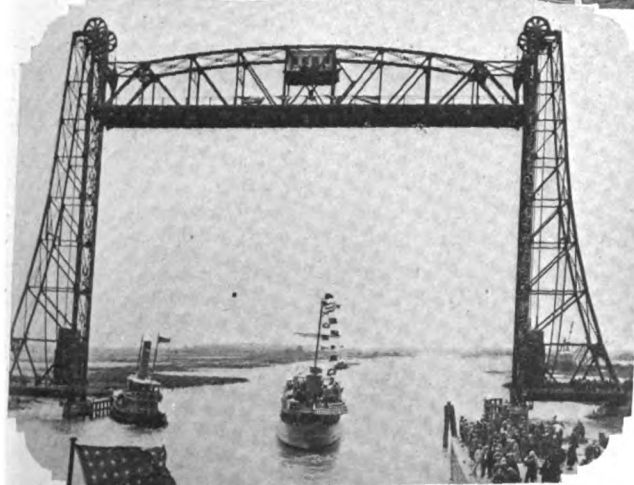
Below — Recently opened \$10,000,000 Chesapeake & Delaware sea level canal. Lift bridge is similar in design to the bridge proposed between the City of Duluth and Minnesota Point

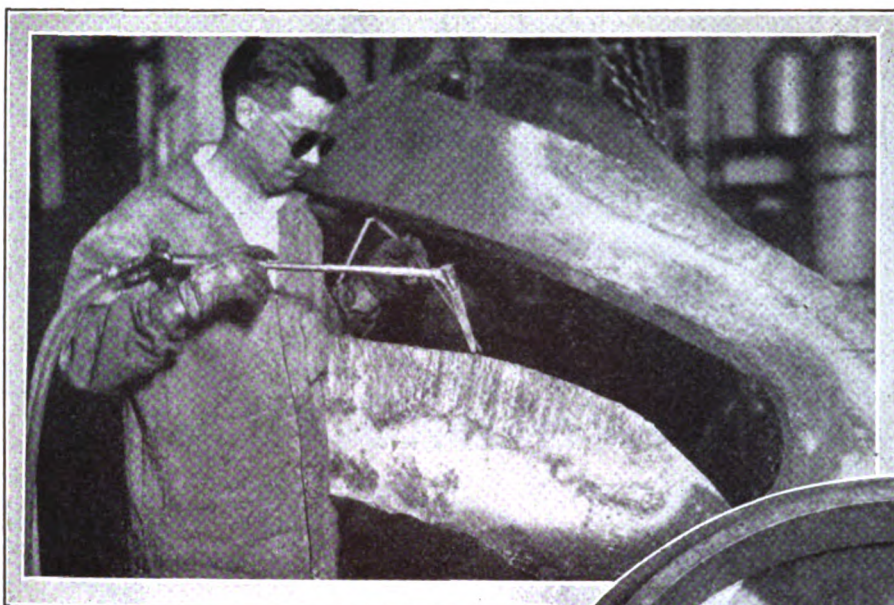


Below—New fuel loader for boats at South Chicago, the Koal Kraft of the Kraft Coal Co.



Below—Steel plant on the Rhine, Westphalia. Germany must import over 20,000,000 tons of iron ore next year, most of it in Rhine barges via Rotterdam or down the Moselle from Lorraine





Applying stellite to the cutting edge

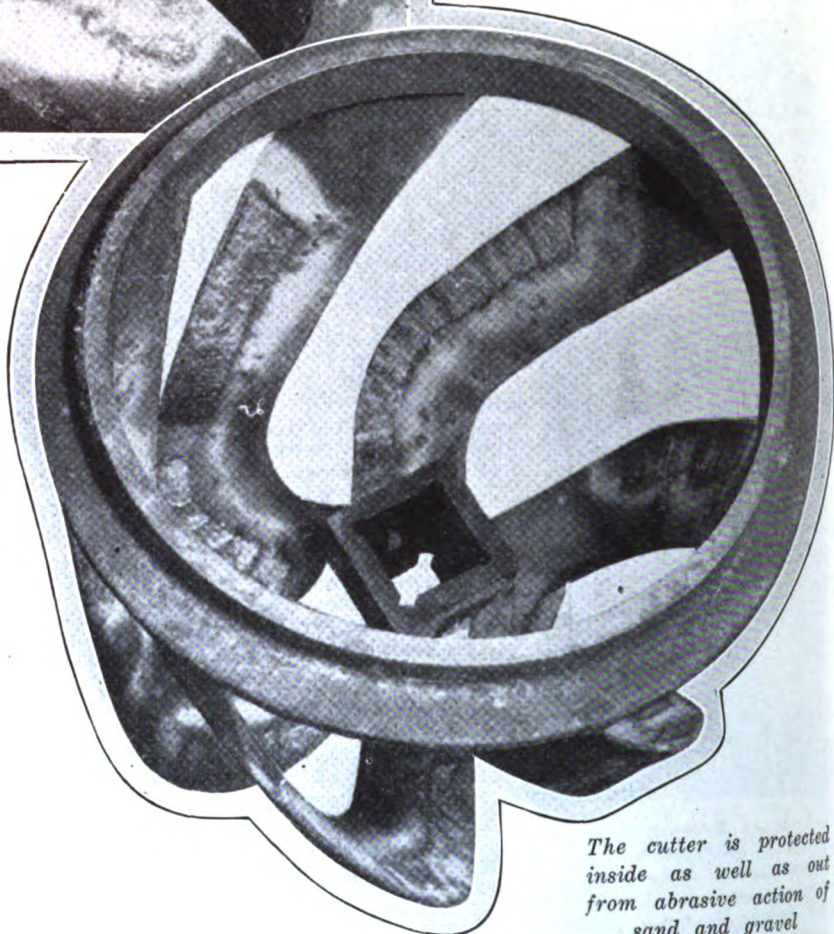
Dredge Bit Is Protected With Stellite

FOR certain types of digging, the modern suction dredge is unsurpassed. It is continuous in operation and will handle tremendous volumes of sand, gravel, mud and clay. Many of these materials are highly abrasive, and all parts of the handling machinery therefore, are rapidly worn away. The action is particularly severe on the blades of the rotary cutter which usually is a steel casting having five or six spiral blades, extending from an annular base and terminating in a heavy central section attached to the driveshaft. The driveshaft with cutter in place is supported on a heavy ladder.

Mounted on the underside of the ladder is a suction pipe, extending beyond the end of the frame into the driveshaft and the cutter. As the cutter loosens the dirt, it is drawn into the suction pipe by a powerful centrifugal pump, and then forced out through the discharge pipe to the point of disposal.

Recently a dredge was sent to a South American harbor where it was known that the digging was such that the life of the rotary cutter would be

From an article appearing in the March issue of *Oxy-Acetylene Tips*.



The cutter is protected inside as well as out from abrasive action of sand and gravel

only about six weeks. This cutter was a steel casting about 4 feet in diameter and 4 feet long, weighing about 3500 pounds and worth \$800 f.o.b. the American foundry, the question of a duplicate arose.

Each of the six cutter blades were about 12 inches wide, the cutting edge being $\frac{3}{8}$ -inch thick, increasing to about 1 inch at the rear end. Use wears the blades down until 4 or 5 inches wide, when replacement is necessary.

In view of the expense of the cutter, and the possible delays in delivery, it was proposed to protect the cutting edges with stellite, an alloy having exceptional wear-resisting properties and suited to such use.

For this purpose a band of stellite about 4 inches wide and 25 inches long was to be applied along the inside and outside faces of the cutting edge of each blade. The stelling process is based on the fact that the alloy melts at a lower temperature than steel and adheres tenaciously when properly applied. It is used in the form of welding rod and an oxyacetylene blowpipe furnishes the heat necessary to apply the alloy.

As will be evident from the accompanying illustrations, welding was

complicated to a certain extent by the curvature of the blades, which made it necessary to change the position of the cutter at brief intervals. The stellite coating was $\frac{3}{8}$ to $\frac{1}{2}$ -inch thick, 150 pounds of the alloy being required for the six blades. The casting was rough and had been painted, all of which tended to impede the operation. It therefore took about 105 hours to complete the job.

This protecting layer brought the total cost of the cutter up to \$1700, a little more than twice the cost of the unprotected casting, but judging from similar applications, the life of the cutter should be increased many times, so the extra investment is more than justified.

Guy Eastman Tripp

1865-1927

GUY EASTMAN TRIPP, since 1912 chairman of the board of the Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa., died at New York, June 14, following a prolonged illness. Mr. Tripp was born in Wells, Me., April 22, 1865. He attended South Berwick academy, Berwick, Me., working at the same time in a general store. When he was 18 he obtained clerical employment with the Eastern Railway Co. When he left seven years later he was chief clerk of the maintenance of way department.

In 1890, he became storekeeper for the Thomson-Houston Electric Co., later becoming traveling auditor. In 1897 he joined Stone & Webster interests, later being made vice president of the Stone & Webster Management association and also of the Stone & Webster Engineering Corp.

When Stone & Webster in 1910 were called into consultation on the affairs of the Metropolitan Street Railway Co., of New York, Mr. Tripp was appointed their special representative, and in this capacity met the requirements of the situation so acceptably that he was elected chairman of the joint committee of the reorganization. It was upon completion of this work that he was selected on Feb. 10, 1912, as chairman of the Westinghouse Electric & Mfg. Co. Shortly after the United States entered the World war Mr. Tripp was made chief of the production division of the ordnance department. He entered the service as a major and within 10 months was promoted to brigadier general and assistant to the chief of ordnance of the United States army. He was awarded the distinguished service medal by the President for "particularly meritorious service." Recognizing the importance of the rapid production of war material as a factor in national defense, Mr. Tripp upon his resignation from the service, continued his co-operation

with the war department in its plan for industrial preparedness. At the time of his death he was a member of the advisory board of the New York ordnance district. For several years he was president of the New York post of the Army Ordnance association.

In view of the material expansion of the international business of the Westinghouse company and in order to familiarize himself with world-wide conditions, Mr. Tripp in 1923-24 circumnavigated the globe, spending several weeks in Japan, where he effected co-operative arrangements with the Mitsubishi interests and was decorated by the Emperor with the Second-Class Order of the Sacred Treasure, the highest honor that can be conferred by that nation on a private citizen.

His articles and addresses upon power development attracted wide notice and many of the more important have been compiled by the Knickerbocker Press as "Super-Power as an Aid to Progress." Last fall a book by Mr. Tripp, entitled "Electric Development as an Aid to Agriculture" was published. Both received wide recognition.

Bates college conferred a degree of LL.D. upon Mr. Tripp in 1924. He was a director in many companies, including American International Corp., American Sugar Refining Co., American Surety Co., Brazilian Securities Corp., Bryant Electric Co., Canadian Westinghouse Co., Ltd., Chase National bank, Campana Westinghouse Electric International, George Cutter Co., Electric Railway Equipment Securities Corp., International Radio Telegraph Co., Krantz Mfg. Co., Martin-Parry Corp., New England Westinghouse Co., R. D. Nuttal Co., Perkins Electric Switch Mfg. Co., Pittsburgh Meter Co., and Radio Corporation of America. In addition to these and the Westinghouse Electric & Mfg. Co., Mr. Tripp was a director of the Westinghouse Acceptance Corp., Westinghouse Commercial Invest-



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ment Co., Westinghouse Electric Products Co., Westinghouse Gear & Dynamometer Co., and the Westinghouse Lamp Co.

He was a member of numerous business and social organizations, including the Union League, Lotos and Railroad clubs of New York, India House, Bankers Club of America, Universities club, London, the Engineers club, Boston, the Circumnavigators club, the Economic clubs of Boston and New York, and the Exchange club, Boston.

He was a member of the board of governors and of the executive committee of the Automobile Club of America.

The scope of Mr. Tripp's activities is further revealed by the following organizations of which he was a member; Academy of Political Science in the City of New York, American Academy of Political and Social Science, Philadelphia; American Defense Society Inc., American Electric Railway association, American Asiatic

association, Army Ordnance association, Caruso American Memorial foundation, Chamber of Commerce of the State of New York, Chamber of Commerce of the United States, Council on Foreign Relations, Japanese society, Maine Society of New York, National Electric Light association, National Industrial Conference board, National Inland Waterways association, New England society, New York Board of Trade & Transportation, and Pennsylvania Chamber of Commerce.

Use Diesel Drive in Oil Barge Tydol

PARTICULAR care was taken in the design and building of the twin screw diesel bulk oil carrying barge TYDOL recently completed by the Sun Shipbuilding & Drydock Co. for the Tidewater Oil Co., New York.

The lines were improved and worked out and model tested to give minimum resistance for maximum capacity. The contract for building the TYDOL was made on Sept. 22 last year. She was launched on April 14 and the contract date of delivery was May 7.

The accompanying illustrations show the completed barge and one of the main Winton diesel engines which furnish the propulsive power. Machinery is located aft. Some of the principal hull particulars are as follows: Length on a 12-foot water line, 258 feet 8 inches; length between perpendiculars, 252 feet; length overall, 260 feet 10¼ inches; breadth molded, 40 feet and over fenders 41 feet 5 inches. The depth molded to deck at side amidships is 14 feet while the depth from the bottom of the keel plate butt laps to the highest point of the permanent superstructure is approximately 24 feet 6 inches. The sheer at the forward perpendicular is 4 feet

and the sheer at the after perpendicular is 2 feet while the lowest point of sheer is at half length between perpendiculars. Twelve feet is the designed draft on even keel in sea water. As an indication that the designers were under no misapprehension as to the real depth available in transiting the barge canal, the designed draft from bottom of keel plate butt laps on even keel and in fresh water, for this service is 9 feet.

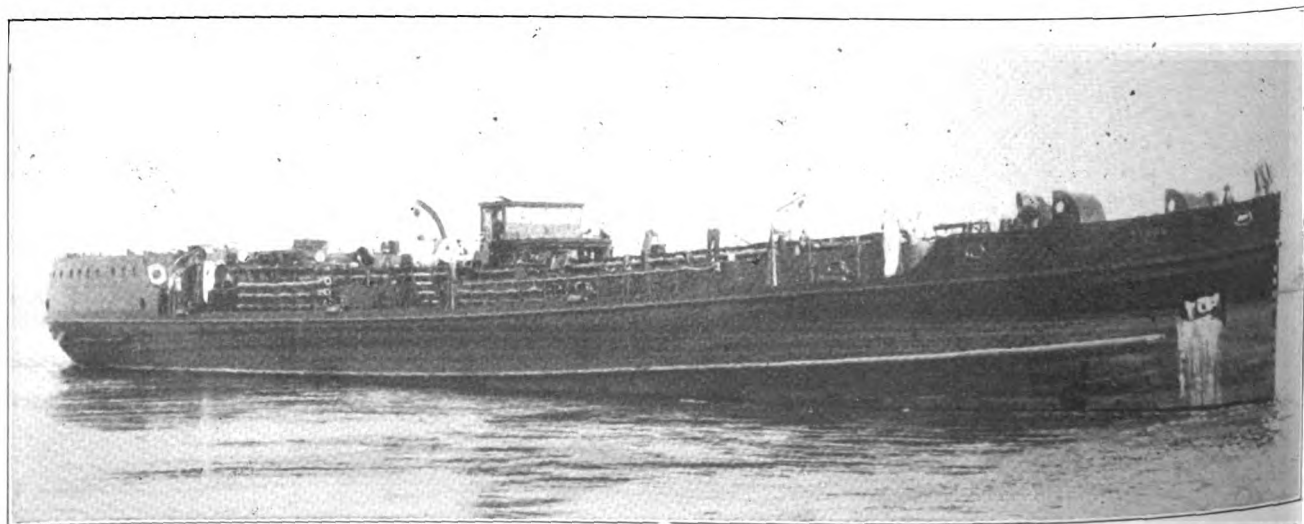
Certain other design features of the TYDOL may be of interest. The straight line pitch of beams in 40-foot breadth is 6 inches. Floor rise at half the molded breadth is 6 inches while the bilge radius molded is 2 feet 6 inches. On a 12-foot molded water line, even keel, and in salt water at 35 cubic feet per ton the displacement for the TYDOL is 2755 tons. The block coefficient for displacement and length on a 12-foot water line is .7753. The midship section coefficient to 12-foot molded water line is .9744. Consequently the prismatic coefficient, the block coefficient divided by the midship section coefficient is .8153. The vertical center of buoyancy is 6.751 feet above the base line and the

longitudinal center of buoyancy is 1.03 feet aft of the mid length between perpendiculars considering the volume to the 12-foot molded water line. The center of gravity of the 12-foot molded water line is 5.74 feet aft of the mid length between perpendiculars.

To give maximum capacity the length of the parallel middle body is 126 feet while the length of entrance is 50.4 feet and the length of run 75.6 feet. The estimated wetted surface to the 12-foot molded water line is 13,600 square feet. The designed speed in deep water in trial condition is 10 knots and the effective horsepower for the designed trial speed and condition is 360. Deadweight capacity of the TYDOL on the 12-foot molded draft even level keel and in salt water is 1885 tons.

There are a total of 15 persons in the personnel of this barge as follows: Captain, two mates, one cook or steward, four seamen, one chief engineer, two assistant engineers, three oilers and one pumpman.

Power for propulsion is furnished by two diesel, single acting, four cycle, air injection, trunk piston, direct reversible, marine type model



TWIN SCREW WINTON DIESEL ENGINED BULK OIL BARGE TYDOL BUILT BY THE SUN SHIPBUILDING & D. D. CO.

121 Winton engines. Each engine has six cylinders of 14 inches diameter and a stroke of 18 inches. The normal rated brake horsepower of each engine is 350 at 225 revolutions per minute. This engine is fitted with an attached compressor of three stage type with a capacity of 157 cubic feet per minute at 225 revolutions per minute. There is an attached circulating water pump of 166 gallons per minute capacity at 66.5 revolutions. The attached lubricating oil pump of two cylinders has a displacement per cylinder of 41½ gallons per minute. There is also a 6 cylinder fuel oil injection pump and an attached fuel oil service pump.

For starting and maneuvering there are four air flasks of 21.1 cubic feet each also four injection air flasks of 2.65 cubic feet capacity each.

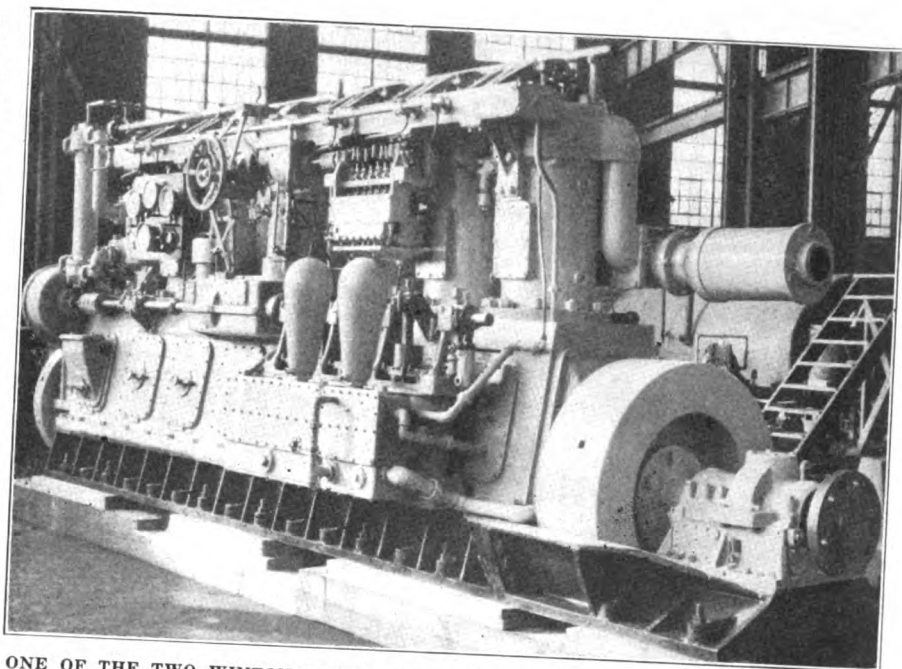
The propellor shafts are of 6¾-inch diameter under the liners. Solid manganese bronze three bladed propellers are fitted. They are 6 feet 6 inches in diameter and have a varying pitch of 49.4 inches at 9 inches radius and 68.2 inches at 3 feet 3 inches radius (the effective pitch for estimating slip is 5 feet). The developed area is 14 square feet.

Auxiliary Machinery

There are two Winton diesel engines driven generating sets. The engines are full diesel single acting, four cycle, air injection, trunk piston, nonreversible, marine type of the maker's model 4-116. Each engine is direct connected by means of a coupling to a 75-kilowatt 230 volt, direct current Westinghouse generator. The engines have four cylinders, 10-inch diameter and 14-inch stroke. Each engine develops at normal rating 120 brake horsepower at 300 revolutions per minute. There are the usual attached compressor circulating water pump lubricating oil pump etc.

An emergency diesel engine driven compressor and generator unit is installed consisting of one Hill diesel, single acting, four cycle, solid injection, three cylinder, marine type, developing at normal rating 18 brake horsepower at 550 revolutions per minute. This engine drives, through clutches, a 12-kilowatt 230-115 volt direct current, Westinghouse generator and a Winton three stage air compressor.

Pumps for general service of rotary type, electric motor driven and furnished by the Northern Pump Co. are fitted as follows: One as a reserve for circulating water, of 250 gallons per minute against 100 pounds discharge pressure; one for fire, sanitary, and general service of 250 gallons



ONE OF THE TWO WINTON DIESEL ENGINES IN THE OIL BARGE TYDOL SHOWING FLYWHEEL AND KINGSBURY THRUST BEARING—350 HORSEPOWER AT 225 REVOLUTIONS PER MINUTE

capacity per minute against 100 pounds discharge pressure; one bilge pump of 75 gallons per minute capacity against 100 pounds discharge pressure; one fuel oil transfer pump of 75 gallons per minute capacity and one lubricating oil pump of 125 gallons per minute capacity, both ratings against 100 pounds discharge pressure.

For refrigeration there is installed one electric motor driven Brunswick-Kroeschell ½-ton direct expansion ammonia type refrigerator. There is an independent electric driven rotary condenser and drinking water circulating pump. Purification of lubricating oil is done by means of an electric driven Sharples No. 4 centrifuge. A complete Lux C02 fire extinguishing system as made by Walter Kidde & Co. has been installed.

Mechanical ventilation is furnished by an electric driven blower, of 1500 cubic feet per minute capacity, located in the machinery space. This blower takes air from the outside through the ventilators and distributes air to the machinery spaces and quarters above deck by means of air ducts. There is an 16-inch electric driven exhaust fan in the after machinery space ventilator.

In the main cargo oil pump room there are three rotary pumps of Northern type each capable of handling at normal rating 525 gallons per minute when operating against a discharge pressure of 100 pounds and at a pump rotor speed of 300 revolutions per minute. Each pump is driven from the machinery space by a Westinghouse 50 shaft horsepower 900-1200 revolutions per minute 220-volt

direct current motor by means of shafting extending through the bulkhead which separates the machinery space and pump room.

In the forward lubricating oil pump room there are two rotary pumps of Northern type each able to handle at normal rating 150 gallons per minute against a discharge pressure of 100 pounds and at a pump rotary speed of 850 revolutions per minute. Each pump is driven by a direct connected Westinghouse motor of 15 shaft horsepower, 650-850 revolutions per minute 220 volts. The motors are of direct current, entirely enclosed, and vapor proof. The motor casings are vented to and from the deck.

All deck auxiliary machinery is electric driven. The steering gear of Allan Cunningham drum type is of 10 shaft horsepower straight electric geared and is controlled by electric telemotor from the midship wheel house, the harbor wheel house, and mechanically in an emergency at the unit. The geared drum actuates the two balanced rudder through chain leads and quadrants. There are two windlasses, one forward and one aft, the latter being for handling the stern anchor. Both windlasses are of Allan Cunningham type of 10 shaft horsepower, triple spur geared, with two wildcats and gypsy heads for the forward windlass and one wildcat and gypsy head for the aft windlass. There are two bower anchors of stockless type, each weighing 1500 pounds and one stern mushroom anchor of 500 pounds weight. The anchor chain at bow and stern is 1½-inch in diameter.

Marine Business Statistics Condensed

Record of Traffic at Principal American Ports for Past Year

New York

(Exclusive of Domestic)

Month	Entrances		Clearances	
	No. ships	Net tonnage	No. ships	Net tonnage
May, 1927	525	2,167,154	539	2,179,208
April	487	2,048,786	565	2,353,404
March	460	1,936,478	515	2,074,694
February	408	1,679,912	468	1,962,365
January	417	1,736,991	455	1,868,270
December	466	1,867,630	548	2,171,938
November	454	1,909,756	477	1,885,401
October	486	1,854,853	542	2,301,465
September	492	2,087,694	548	2,270,898
August, 1926	491	2,034,147	507	2,075,643

Baltimore

(Exclusive of Domestic)

Month	Entrances		Clearances	
	No. ships	Net tonnage	No. ships	Net tonnage
May, 1927	112	333,395	117	340,274
April	131	409,145	127	377,039
March	120	355,162	117	323,893
February	100	308,501	95	301,401
January	117	362,553	126	361,277
December	245	722,141	269	783,058
November	292	818,707	298	853,723
October	271	791,999	261	783,263
September	230	678,127	224	670,465
August, 1926	228	672,453	221	639,677

New Orleans

(Exclusive of Domestic)

Month	Entrances		Clearances	
	No. ships	Net tonnage	No. ships	Net tonnage
May, 1927	277	640,252	269	627,452
April	262	642,846	268	664,467
March	276	712,619	278	695,963
February	240	632,092	249	629,562
January	240	697,039	244	712,284
December	259	746,636	266	755,294
November	253	731,871	238	685,253
October	236	673,606	250	721,609
September	226	620,095	240	666,779
August, 1926	225	764,464	256	721,634

Philadelphia

(Including Chester, Wilmington and the whole Philadelphia port district)

(Exclusive of Domestic)

Month	Entrances		Clearances	
	No. ships	Net tonnage	No. ships	Net tonnage
May, 1927	88	196,606	47	86,214
April	86	194,135	52	123,179
March	96	223,255	58	131,147
February	81	190,536	48	126,619
January	79	208,354	59	167,258
December	145	373,902	129	341,421
November	168	429,403	189	377,016
October	145	370,112	128	329,420
September	107	234,144	82	196,484
August, 1926	109	248,485	81	170,661

Norfolk and Newport News

(Exclusive of Domestic)

Month	Entrances		Clearances	
	No. ships	Net tonnage	No. ships	Net tonnage
May, 1927	27	56,458	70	179,658
April	23	54,983	77	209,869
March	32	87,970	98	264,863
February	31	88,928	77	232,403
January	49	134,238	118	350,311
December	216	636,483	254	781,545
November	184	527,290	281	782,914
October	252	683,297	307	850,828
September	252	705,604	281	766,503
August, 1926	188	546,861	255	733,937

Charleston

(Exclusive of Domestic)

Month	Entrances		Clearances	
	No. ships	Net tonnage	No. ships	Net tonnage
May, 1927	26	79,355	24	61,882
April	23	60,557	26	68,755
March	28	84,155	31	85,476
February	27	81,829	33	158,095
January	33	96,054	31	77,315
December	33	94,427	89	102,724
November	39	114,449	89	103,256
October	11	32,323	15	40,127
September	22	65,872	34	98,447
August, 1926	24	64,334	20	51,505

Boston

(Exclusive of Domestic)

Month	Entrances		Clearances	
	No. ships	Net tonnage	No. ships	Net tonnage
May, 1927	130	318,196	100	262,982
April	120	343,388	72	201,868
March	95	301,413	59	187,556
February	83	277,063	40	119,246
January	88	266,147	51	159,241
December	97	286,013	62	170,314
November	89	275,245	56	177,876
October	109	300,921	58	171,933
September	105	308,189	83	216,136
August, 1926	128	321,377	96	206,879

Savannah

(Exclusive of Domestic)

Month	Entrances		Clearances	
	No. ships	Net tonnage	No. ships	Net tonnage
May, 1927	39	107,763	34	96,410
April	38	107,763	36	104,445
March	40	97,689	33	102,822
February	50	115,821	39	95,521
January	46	120,271	42	113,706
December	42	97,563	30	76,030
November	33	88,673	27	71,040
October	43	106,733	36	95,000
September	36	96,175	32	85,198
August, 1926	37	104,323	36	105,821

Galveston

(Exclusive of Domestic)

Month	Entrances		Clearances	
	No. ships	Net tonnage	No. ships	Net tonnage
May, 1927	43	114,628	82	248,364
April	47	146,318	97	315,409
March	58	147,040	103	302,474
February	64	180,917	118	359,948
January	47	112,816	118	352,204
December	52	139,219	127	365,395
November	55	129,477	131	369,432
October	60	164,241	116	352,299
September	53	119,497	72	185,444
August, 1926	28	65,578	61	180,449

Portland, Me.

(Exclusive of Domestic)

Month	Entrances		Clearances	
	No. ships	Net tonnage	No. ships	Net tonnage
May, 1927	24	38,244	22	37,246
April	21	37,182	21	37,114
March	23	63,195	27	73,944
February	23	65,826	21	59,178
January	25	59,155	26	66,791
December	32	71,748	34	77,400
November	20	34,092	20	34,917
October	20	48,468	23	62,900
September, 1926	24	43,783	19	35,828

Key West

(Exclusive of Domestic)

Month	Entrances		Clearances	
	No. ships	Net tonnage	No. ships	Net tonnage
May, 1927	105	113,030	106	115,564
April	78	79,818	74	75,913
March	80	91,602	75	93,700
February	90	101,179	84	102,571
January	89	116,112	89	119,191
December	92	113,985	87	104,448
November	97	116,965	97	115,032
October	78	92,987	79	96,718
September	81	91,321	80	88,844
August, 1926	84	98,702	87	99,362

Los Angeles

(Exclusive of Domestic)

Month	Entrances		Clearances	
	No. ships	Net tonnage	No. ships	Net tonnage
May, 1927	161	470,471	138	456,445
April	179	477,762	173	441,374
March	156	451,428	165	442,252
February	144	418,190	144	404,735
January	137	420,426	138	381,692
December	155	438,464	123	386,000
November	184	439,736	138	397,937
October	187	448,038	155	421,507
September	151	406,314	211	586,739
August	143	458,240	151	399,349
July, 1926	127	460,296	103	352,367

Providence

(Exclusive of Domestic)

Month	Entrances		Clearances	
	No. ships	Net tonnage	No. ships	Net tonnage
May, 1927	9	36,882	6	25,950
April	7	28,776	5	18,903
March	7	26,065	7	20,780
February	3	10,380	6	23,696
January	3	9,632	6	20,091
December	5	17,666	5	19,074
November	2	7,699	2	7,690
October	7	23,091	8	29,815
September	5	20,651	5	22,324
August, 1926	6	20,764	3	12,299

Mobile

(Exclusive of Domestic)

Month	Entrances		Clearances	
	No. ships	Net tonnage	No. ships	Net tonnage
May, 1927	107	240,273	108	218,246
April	107	217,848	98	197,935
March	99	249,158	86	199,907
February	96	224,819	83	191,752
January	82	164,129	82	174,618
December	90	200,301	83	182,839
November	98	213,430	99	211,785
October	84	179,225	75	165,838
September	89	166,164	81	168,197
August, 1926	86	153,642	84	159,256

San Francisco

(Exclusive of Domestic)

Month	Entrances		Clearances	
	No. ships	Net tonnage	No. ships	Net tonnage
May, 1927	148	545,414	137	510,560
April	141	531,380	137	515,574
March	145	555,324	148	548,353
February	147	561,214	138	513,253
January	133	497,560	141	522,596
December	134	520,962	134	500,347
November	128	453,103	139	512,671
October	145	532,024	153	575,283
September	170	568,323	156	561,510
August, 1926	169	580,310	111	466,346

Portland, Oreg.

(Exclusive of Domestic)

Month	Entrances		Clearances	
	No. ships	Net tonnage	No. ships	Net tonnage
May, 1927	24	86,618	28	98,277
April	31	120,431	44	159,247
March	21	78,379	31	106,768
February	15	63,320	28	106,355
January	29	102,736	39	134,127
December	34	131,426	56	213,861
November	34	135,455	48	173,820
October	41	151,013	59	217,745
September	33	126,772	56	201,152
August, 1926	40	160,609	46	167,419

Seattle

(Exclusive of Domestic)

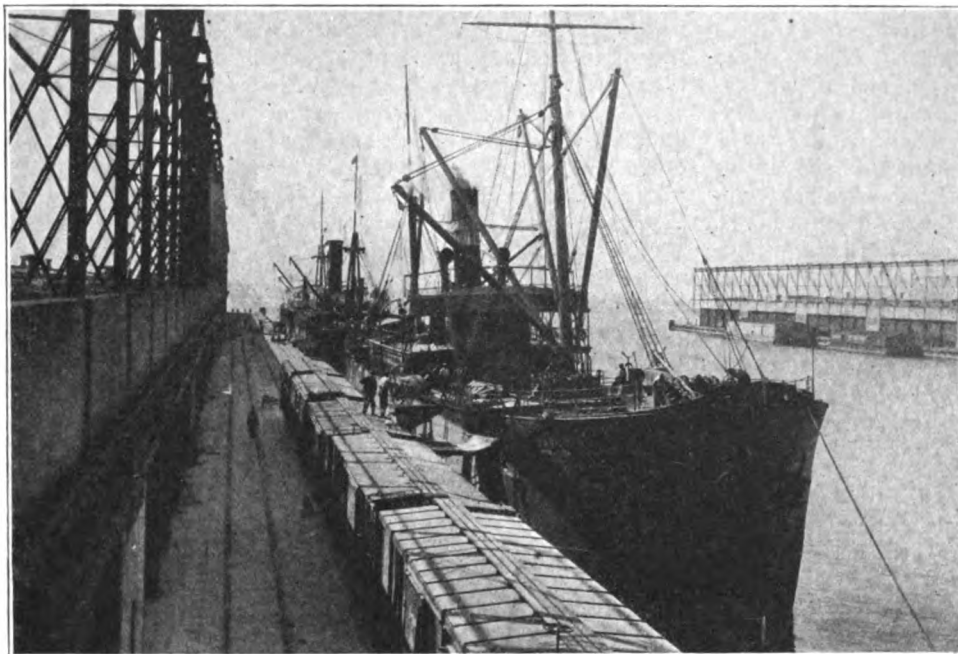
Month	Entrances		Clearances	
	No. ships	Net tonnage	No. ships	Net tonnage
May, 1927	41	177,869	42	169,083
April	46	186,581	49	185,593
March	39	159,034	44	175,937
February	40	170,776	45	195,692
January	53	233,914	47	192,233
December	42	176,065	54	201,988
November	63	234,742	54	231,843
October	56	236,587	55	230,412
September	54	219,623	58	238,820
August, 1926	53	229,111	48	206,042

Port Arthur

(Exclusive of Domestic)

Dock Management Progress Section

How Successful Dock Operators Have Met
Problems of Giving Best Service to Ships



Discharging nitrates from ship to rail at Norfolk, Va., Tidewater Terminals

Reduce Stevedoring Accidents By Thorough Co-operation

By S. F. C. Sweeny

CARGO handling is a peculiarly hazardous occupation for many reasons from among which might be selected the following five as being, perhaps, the most outstanding:

1. World need for economy, which drives ship owners to supply poor and inadequate gear with which to work their ships.

2. Competition among stevedores causing cutting of prices and the consequent avoidance of all actions causing delay. In other words, creating rush.

3. Lack of final authority to insist on improvement of working conditions; or the taking of prompt action when unsound conditions present themselves.

4. Working hours are irregular

The author, S. F. C. Sweeny, is safety engineer of the Shipping Federation of British Columbia, Vancouver, B. C.

and employment is full of peak loads and depressions. Night work under bad lighting conditions is prevalent.

5. The type of work is continually changing. For these reasons, through co-operation of a very generous nature only, can the hazards of cargo handling be materially reduced. Poorly found ships, poorly maintained, make for carelessness on the part of every individual having anything to do with them. Bad working conditions are a depressant. Competition must acknowledge the clear boundaries of safety. Safety must have authority. Continuity of work must be striven for. Adaptability must be obtained.

Responsibility for Injuries

From a responsibility classification of injuries received over a period of nearly two years, it is possible to state:

(a) That from the frequency point of view, 80 per cent of our long-shore accidents could have been avoided by carefulness on the part of the injured or their partners only and 20 per cent might have been avoided by better methods, more consideration, or better gear, as provided by the stevedore or ship owner.

(b) That from the severity point of view, these figures must be altered to 60 per cent and 40 per cent respectively.

What need for co-operation here? Obviously some need and when we consider that both costs and personal suffering are more nearly proportional to severity than to frequency, we feel inclined to accept the severity rating of responsibility for injuries as being the measure we should adopt.

In all our large ports there are,

besides a general port authority:

(a) A general port federation or association of shipping interests.

(b) A general port federation or association of labor.

Now, the recipients of practically all of the injuries are the longshoremen. They are protected usually by some compensation law insuring them 50 per cent to 65 per cent of their wages for time lost through injuries received while at work. As a class they are not thrifty. They spend just what they earn and if not seriously injured, rather enjoy their better than half pay holiday. There is, of course, a percentage who strive hard to avoid injuries, but the bulk are of rather fatalistic tendencies. This being the case, definite stimulation from some outside source is necessary to accomplish any reduction in this 80 per cent frequency and 60 per cent severity.

Hold Men to Account

Obviously the first essential is to present the case clearly to the longshoremen and to continually keep them posted as to their responsibility for individual accidents as they happen. They must then be impressed with every phase of the necessity of making an effort to improve their safety record, through encouragement to avoid the misery caused by themselves and through the enforcement of regulations to avoid the expenses caused to the industry. Here then, is where a safety department must analyze the hazards existing, determine the relation of employer and employe responsibility where injuries are received and frame regulations, or standards of practice to prevent recurrence.

Having this part of the safety department's work accomplished will, however, take us only part of the way to a substantial reduction in this 80 per cent of injuries received. Effort is necessary, and more than the effort that can be instilled by the most rigorously enforced regulations. An effort of good will is required from the longshoremen. The desire to make a sustained effort to reduce injuries received must be instilled into the men and the men's associations.

Men's Committees to Investigate

If the men can be induced to encourage carefulness and censure carelessness within their own associations, to hold courts of inquiry where they have been held to blame and to run safety competitions among themselves, injuries can be reduced to a minimum. It means selling the idea to the men's associations and this selling is one of the most important func-

tions of the safety department. The idea is goodwill and the price is co-operation. The employer can have co-operation of the employe if he will give of his goodwill to the extent of acknowledging his responsibility for injuries and by taking definite action to improve the conditions, bringing this responsibility upon him.

This brings us to the employer's responsibility for injuries received, which we have set at 20 per cent frequency and 40 per cent severity. What further need for co-operation here? Better working conditions are required and they are not so easy to obtain, because the working places and a great part of the machinery used are supplied by owners, often represented only by agents in the employers association concerned. In simple language, stevedores can only supply good working conditions insofar as they can supply good tools and good supervision. Unless ship owners maintain good machinery and good equipment, bad working conditions will prevail. Co-operation between stevedores, shipping companies, ship owners and ship agents is necessary to obtain sound working conditions.

Companies Should Co-operate

Goodwill is the birthplace of good work and good working conditions. This is an axiom that might well be adopted wherever industry is carried on. As an example it is necessary that steamship agents should, when so required, be ready to support the association, by going to owners they represent and asking for improvements in equipment and machinery, to eliminate unsafe working conditions and maintain the goodwill existing. That such action is necessary is realized by every stevedore who has loaded ships. Working conditions as found in almost a majority of deep sea ships would never be allowed in factories on land. Among the prevalent hazards might be mentioned:

1. Hatch beams that cannot be securely fixed in their sockets.
2. Winches lacking guards over moving parts.
3. Winches with insecure clutches.
4. Insufficient lights for night work.
5. Bad ladders into holds.
6. Ill-fitting and poorly conditioned hatchboards.
7. Lack of hold-fasts for snatch blocks, or other means of mechanically stowing heavy bulky cargo, such as logs.
8. Poor and insufficient hold-fasts for guys and preventer guys on derricks.

Goodwill is the foundation of accident prevention and to maintain this foundation it is necessary for shipping interests generally, to get together and improve working conditions.

Shipping organizations should operate safety committees to investigate all important accidents, the prevention of which lies outside the power of the individual injured. (these are estimated at 20 per cent of the accidents happening) and should take action to minimize the causes.

Men's organizations or associations should operate safety committees to investigate all important accidents, the prevention of which lies within the power of the individual hurt, and should take action to minimize the causes.

Back Up Safety Committees

If any benefit is to be derived from these committees, their respective associations must support them by taking action with respect to their recommendations or findings.

Unless the employer tackles the question of "improvement in working conditions" and makes progress in his attacks, it is useless for him to expect the worker to give up his careless habits.

Without standardization of safe practices, the employer cannot eliminate many hazards now existing because of the necessity of avoiding loss of time.

With progress on the attack on "unsafe working conditions" enthusiasm will prevail, the safety committees will flourish. Safety competitions will be possible and "no accident" campaigns can be carried to successful conclusion.

With standardization of practices an undesirable phase of employer competition will vanish.

Such is my idea of the co-operation necessary to insure progress of the safety movement in the stevedoring industry.

Walter Rawlings Hough, president of the board of fire commissioners of Baltimore, and chairman of the fire commissioners' section of the National Fire Protection association, has been elected a vice president of the Garrison Fire Protecting System Inc. of New York.

Mr. Hough for more than 10 years has been closely identified with the development of national fire prevention work. He was one of the originators of the movement leading to the formation of the national fire waste conference of the chamber of commerce of the United States.

Captain Bessant Dies

Living to the age of 89 Capt. George W. Bessant an old time Great Lakes mariner died in Painesville, O., June 11. He was born in England and went to sea at the age of 14, becoming captain of a sailing vessel in his early twenties. He came to the United States and established his home on the shores of Lake Erie near Cleveland. He began his career on the Great Lakes as captain of the schooner

ROB ROY. He retired thirty years ago as captain of a steamer.

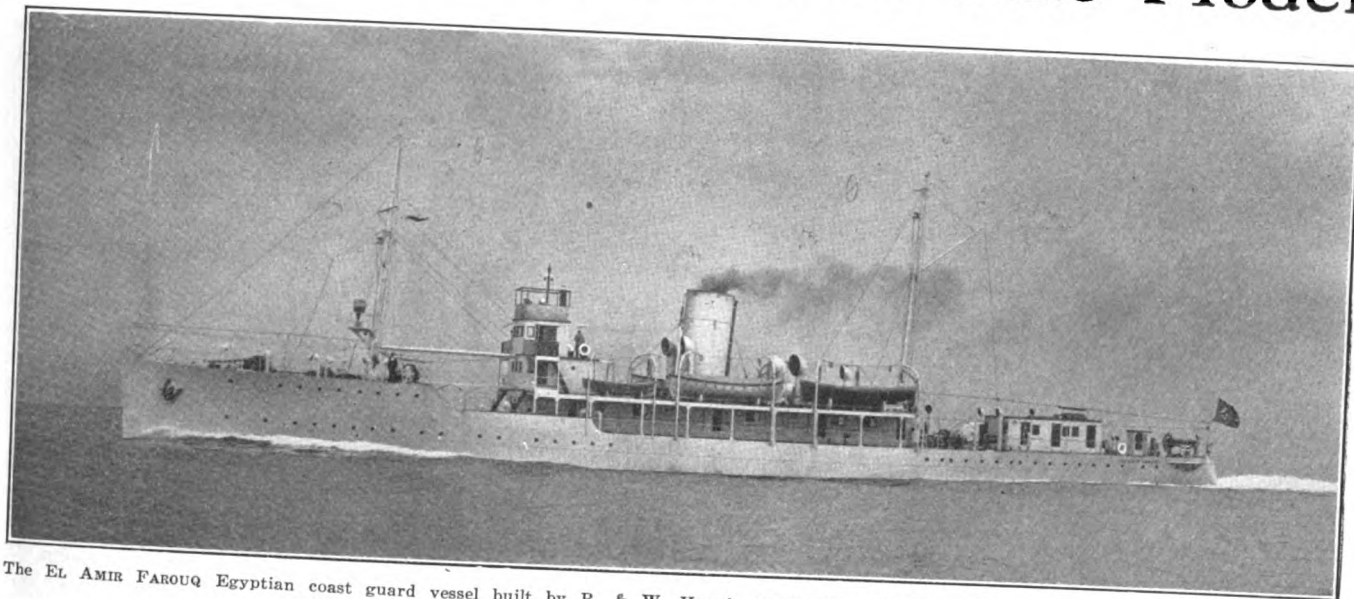
To Order Two Tugs

Bids were opened by Commissioner J. J. Farrell in charge of the division of canals and waterways, New York, on June 24 for the construction of two tugs. These tugs are to be 77 feet in length overall, 20 feet 10 inches in breadth and 10 feet 7 inches in molded depth. They must be delivered at Waterford, N. Y., by Nov. 1.

Consulting Engineer

Ian L. McKenzie for the last four years naval architect for the Great Lakes Boat Building Corp., Milwaukee, and Chicago has resigned to open an office of his own as naval architect and marine engineer. Mr. McKenzie is engaging in general consulting practice, yacht brokerage and marine insurance and his office is located at 11 Balmoral avenue, South Hamilton, Ont.

Egyptian Vessel Is Given Fine Model



The EL AMIR FAROUK Egyptian coast guard vessel built by R. & W. Hawthorne, Leslie & Co., Ltd., England. Her excellent proportions and trim appearance are indicative of the professional skill of British shipbuilders

THE handsomely modelled twin screw vessel EL AMIR FAROUK, illustrated herewith which R. & W. Hawthorn Leslie & Co., Ltd., England constructed to the order of the coastguards and fisheries service of the Egyptian government was delivered last August after a trial off the mouth of the River Tyne. The results of the trial were superior to the requirements of the contract.

This vessel is 255 feet long overall and is rigged as a two-masted fore and aft schooner with raked stem and cruiser stern. As she was designed for special service on the Egyptian coast, there are many special features in connection with her construction.

A suite of rooms consisting of two tastefully decorated staterooms, with private saloon, pantry and bathroom is arranged on the upper deck aft for the exclusive use of official guests of the government. The accommodation for the captain, officers and engineers received special consideration, the captain's suite being in a special house on the upper deck forward.

The officers and engineers, who are accommodated at the after end of the vessel on the second deck are provided with up-to-date and spacious accommodation, while adequate provision has been made for cadets so that the vessel may be used for training purposes.

Unusually Complete Wireless Outfit

An elaborate system of wireless telegraphy is fitted and accommodation is arranged for wireless operators on the boat deck forward.

Electric heating is provided throughout the accommodation together with electric fans.

The most modern lifesaving appliances are fitted and include two special motor boats in addition to lifeboats. A skiff and gig are also provided for the general working of the ship.

The vessel is subdivided by eight watertight bulkheads and a hold is arranged forward with the necessary cargo appliances. Refrigerated chambers are arranged at the fore end of the machinery space and fitted with machinery of the CO₂ type.

Two electric generators are fitted and the electric installation includes the supply of a 24-inch searchlight projector.

Trial Speed Nearly 18 Knots

On the trial trip the vessel attained a speed of 17¾ knots and afterward returned to the river to prepare for passage to Egypt under her own steam.

The propelling machinery was constructed by the builder at the St. Peter's works, and consists of two sets of triple expansion engines. Steam is supplied by two cylindrical boilers, working under Howden's system of forced draft with an independent donkey boiler, and both main and donkey boilers are equipped with the White system of oil fuel burning.

P. M. Tottenham Esq., C. P. E. chief inspecting engineer of the Egyptian government in London was responsible for the construction of the vessel and Messrs. Flannery Baggallay & Johnson Ltd., carried out the inspection of the building of the vessel.

What the British Are Doing

Short Surveys of Important Activities in Maritime
Centers of Island Empire

THE expected boom in British shipbuilding has not yet materialized but there are encouraging signs, particularly in the Clyde area. The majority of the firms in that district are much busier than they were a few months ago and increasing numbers of men are finding employment. The output for the year up to date consists of 72 vessels of 104,706 tons which is less than that of the first five months of last year by over 35,000 tons and of that of 1913 by over 189,000 tons. Among recent contracts is one which the Canadian Pacific Steamships Ltd. have placed with John Brown & Co. Ltd., Clydebank, for two additional passenger and cargo liners of the owners "M" class. These will be sister ships to the two ordered in the summer of last year—one from John Brown and the other from William Beardmore—and will be geared turbine steamers of about 18,000 tons gross with accommodation for about 1600 passengers, and capacity for about 4000 tons of cargo.

THE passenger and cargo steamer AVALONA built by John Brown & Co. for the Blue Star Line recently underwent trials on the Clyde. The vessel is designed for passenger and refrigerated meat trade between Great Britain and South America. The

propelling machinery consists of two sets of Parsons combined impulse and reaction turbines operating with twin screws through single reduction mechanical gearing.

PRINCESS Mary, Viscountess Lascelles, performed the ceremony of launching the Australian cruiser CANNBERRA from the shipyard of John Brown & Co. Clydebank on May 31. Lord Aberconway presiding at the luncheon which followed the launching of the vessel, said the CANNBERRA was of 10,000 tons displacement which was the limit of size for her class imposed by the Washington Convention. She would carry 3400 tons of oil fuel and would have a far greater radius of action than that to which they were accustomed in cruisers, while she would have a speed of 31½ knots which was not approached by a destroyer a few years ago.

THE oil tanker BEACON STREET of 11,000 tons, launched by Palmers Shipbuilding Co. at Jarrow for the Beacon Oil Co. of America has been constructed in 100 days. The tanker is built on the bracketless system invented by Sir Joseph Isherwood, who on behalf of the owners stated that he was highly pleased at such rapid construction in a British shipyard. The vessel was christened by Mrs.

Hague, wife of R. L. Hague, manager of the marine department of Standard Oil Co. of New Jersey who made a special journey from America for the ceremony.

THE Blythwood Shipbuilding Co. of the Clyde are about to construct two large single screw passenger and cargo vessels for a well known Liverpool firm of shipowners. The ships will be between 10,000 and 11,000 tons deadweight and will be propelled at a speed of 11½ knots by Harland, B. & W. internal combustion engines supplied by John G. Kincaid and Co. Ltd. of Greenwich. They will be of practically the same dimensions as the four twin screw vessels which the Blythwood Shipbuilding Co. have under construction for Furness Withy & Co. and which were ordered in January of last year.

PALMERS SHIPBUILDING Co. launched the BOLIVAR, one of 11 tankers ordered by the Venezuela Oil Co. A. B. Gowan, managing director, on the occasion of the launch, said that prices were very low and the only road to recovery was by rapid output. Workmen were doing their best to assist the employer, but a tremendous amount more shipyard work was needed. The company has about twenty vessels on the books.

What's Doing Around The Lakes

FORMAL opening to traffic of the new Buffington harbor of the Universal Portland Cement Co., at Buffington, Ind., was attended by interesting public ceremonies on June 9. Vice President Charles G. Dawes raised a flag over the new structure at the dedication ceremonies.

Besides Vice President Dawes' address, other speakers were E. J. Buffington, president, and T. W. Robinson, vice president in charge of operations, of the Illinois Steel Co., Senator James E. Watson, of Indiana, and William R. Dawes, president of

the Chicago Association of Commerce. B. F. Affleck, president of the Universal Portland Cement Co., presided. Two lake steamers of the Goodrich Transit Co. carried more than 1500 engineers, architects and others to the harbor from Chicago.

THE new deep water harbor and dock cost more than \$2,000,000. It provides facilities for unloading limestone received from Michigan quarries and for loading cement for shipment to various lake ports. The storage yard covers 30 acres, and was

created with sand dredged from the harbor. The capacity of the yard is 1,000,000 tons of limestone or coal.

GREAT LAKES vessels now are in full operation on summer schedules. Boats operating out of Chicago are on daylight savings time, with schedules corresponding with the boat lines on Lake Erie. Only slight changes were made in the passenger boat schedules from last season. This year's passenger season was more than three weeks delayed by backward weather. Trial trips found

the summer vessels in good condition and ready for the season's business.

BOATS serving the Michigan fruit belt are expected to carry a heavy volume of business this year, according to present indications as to the fruit yield. Last year proved to be an unusually heavy year in fruit shipping. The 1926 season was 20 to 25 per cent ahead of the usual average year.

THE harbors committee of the Chicago city council is taking up the proposed amendments to the

ordinance which would authorize work to proceed on the Lake Calumet harbor project. These amendments are demanded by the Illinois state waterways superintendent. Before a permit will be issued by the state for the harbor, the city must agree to dredge the channel itself, the Nickel Plate railroad paying \$600,000 in cash for a belt railroad right-of-way and land for a switchyard. Several minor amendments also are asked.

LIEUT. COL. G. B. PILLSBURY, engineer in charge of the lake survey in the Detroit district, recent-

ly told the Western Society of Engineers that \$3,400,000 will restore the levels of the Great Lakes to the desired point. He maintained that such an expenditure would do away largely with fluctuation in lake levels. The money would be spent on constructing submerged rock sills in the St. Clair and Niagara rivers to retard the outflow.

STEAMSHIP companies on the Great Lakes have compiled their summer passenger and freight schedules which go into effect by the end of June.

Ocean Freight Rates

Per 100 Pounds Unless Otherwise Stated

Quotations Corrected to June 18, 1927 on Future Loadings

NOTE: FREIGHT RATES STEADY WITH BUT SLIGHT CHANGE

New York to	Grain	Provisions	Cotton (H. D.)	Flour	General cargo cu. ft.	100 lbs.	Finished steel	REMARKS Freight Offered	From North Pacific Ports to	Lumber Per m. t.
Liverpool.....	2s 0d†	\$0.60	\$0.40	0.22	\$0.50	\$0.90	\$8.00T***	Poor	San Francisco.....	\$4.50 to 5.00
London.....	2s 0d†	0.60	0.40	0.22	0.50	0.90	8.00T***	Poor	South California.....	4.50 to 5.00
Oslo.....	\$0 18	0.45	0.50	0.30	0.42½	0.85	8.00T	Poor	Hawaiian Islands.....	9.00 to 10.00
Copenhagen...	0.18	0.45	0.50	0.30	0.50	1.00	8.00T	Poor	New Zealand.....	16.00 to 19.00
Hamburg.....	0.11	0.55	0.40	0.23	0.50	0.90	10.00T	Fair	Sydney.....	14.00 to 14.50
Bremen.....	0.10	0.35	0.50 to 65	0.23	0.50	0.90	10.00T	Fair	Melbourne-Adelaide....	14.00 to 15.00
Rotterdam and Amsterdam....	0 15	0.32½	0 60	0 25	0.45	0.80	9.50T	Fair	Oriental Ports.....	11.00 to 12.00
Antwerp.....	0.07	0.32½	0 45	0 23	0.45	0.80	9.50T	Poor	Oriental Ports (logs)...	14.50 to 15.50
Havre.....	0.14	0.55	0.50	0.30	0.45	0.80	9.00T	Quiet	Peru-Chile.....	13.50 to 16.00
Bordeaux.....	0.14	0.55	0.50	0.30	0.45	0.80	9.00T	Quiet	South Africa.....	20.00 to 24.00
Barcelona.....	....	0.50	0.30	10.00 bags	-12.00T-	10.00T	10.00T	Fair	Cuba.....	15.00 to 17.00
Lisbon.....	....	0.75	0.50	8.00T bags	-23.00T-	8.00T	8.00T	Poor	United Kingdom.....	80s to 95s
Marseilles.....	....	0 65	0.40	7.00 bags	-23.00T-	8.00T	8.00T	Poor	United Kingdom (ties)...	....
Genoa.....	0 19	14.25	0.50	9.00	-23.00T-	11.50T	11.50T	Fair	Baltimore-Boston range..	\$14.00 to 14.50
Naples.....	0 19	14.25	0.50	9.00	-23.00T-	11.50T	11.50T	Fair	Florida Range.....	No rates
Constantinople.	0 27	20.00T	0.85	0 40½	-24.00T-	11.50T	11.50T	Poor	Buenos Aires.....	15.00 to 17.00
Alexandria.....	....	20.00T	0.85	0 40½	-24.00T-	11.50T	11.50T	Poor	North of Hatteras.....	14.00 to 15.00
Algiers.....	....	0.85	0.60	0.45	-23.00T-	11.50T	11.50T	Poor	China.....	10.50 to 11.00
Dakar.....	....	17.00	....	15.50T	-23.00T-	11.50T	11.50T	Very good	Jayan.....	9.50 to 10.50
Capetown.....	....	18.00	....	13.00	20.00	13.00 to 18.00	13.00 to 18.00	Good	Flour and Wheat	
Buenos Aires.....	....	22.00T	....	....	20.00 to 22.00T†	3.00 to 8.80T	3.00 to 8.80T	Fair	U. K. and Continent	
**Rio de Janeiro	....	22.00T	....	....	20.00 to 22.00T†	7.00 to 7.70T†	7.00 to 7.70T†	Fair	(gross ton).....	33s 9d to 35s 0d
Pernambuco...	....	22.00T	....	9.00T	-22.00T-†	9.70T†	9.70T†	Fair	Oriental Ports (net tons)...	
Havana.....	0 30*	0.50	....	0 30*	0.61	1.33	10.00	Fair		
Vera Cruz.....	0 25	0.30	0.35	0 25	0.52½	1.05	0.30 to 0.35	Fair		
Valparaiso.....	....	1.07	....	0 70	....	....	10.00T	Fair		
San Francisco...	....	0.35 to 0.70	....	0 40 to 1.10	....	....	0.25 to 0.30	Fair		
Sydney.....	....	18.00T	1.25	18.00T	18.00-24.00T	9.00 to 11.50T	9.00 to 11.50T	Fair		
Calcutta.....	....	....	....	10.00T	-16.00T-	10.00T	10.00T	Fair		

T—Ton. †Per quarter of 480 lbs. ‡Landed. ††Heavy products limited in length. *Extra charge for wharfage. **Plus \$0.50 surcharge on all rates to Rio de Janeiro on account of congestion. ***Plus 15 per cent.

Principal Rates To and From United Kingdom

	s	d		s	d
Grain, River Plate to United Kingdom...	26	9	Pig iron, United Kingdom to New York or Philadelphia.....	12	6
Coal, South Wales to Near East.....	12	4	Iron ore, Bilbao to Cardiff.....	6	9
Coal, United Kingdom to Buenos Aires...	12	9	Iron ore, Huelva to Phila. or Balto.....	11	6
Manganese Ore, Poti to Philadelphia...	\$3.95				

Bunker Prices

At New York

	Coal alongside per ton	Fuel oil alongside per barrel	Diesel engine oil alongside per gallon
Aug. 12, 1926	5.00@5.60	1.81½	6.10c
Sept. 18.....	5.45@6.00	1.81½	6.05
Oct. 22.....	7.25@7.50	1.70½	5.86
Nov. 19.....	7.00@7.50	1.81½	5.87
Dec. 20.....	6.25@6.50	1.81	5.86
Jan. 19.....	5.90@6.15	1.81½	5.87
Feb. 18.....	5.25@5.50	1.81½	5.95
Mar. 18.....	5.25@5.50	1.81½	5.95
Apr. 19.....	5@5.50	1.75	5.71
May 19.....	5.65	1.81½	5.63
June 18, 1927.	5.50	1.71½	5.39

At Philadelphia

	Coal trim. in bunk per ton	Fuel oil alongside per barrel	Diesel Eng. oil alongside per gallon
Aug. 12, 1926..	5.00@5.25	1.69@1.74½	5.75@6.17c
Sept. 18.....	5.00@5.35	1.74@1.74½	6.14½
Oct. 22.....	7.25@7.50	1.74@1.80½	5.66@5.88
Nov. 19.....	7.00@7.50	1.80½@1.81	5.43@5.88
Dec. 20.....	5.50@5.75	1.80@1.90½	5.64@6.19
Jan. 19.....	6.20	1.95@1.95½	5.88@6.19
Feb. 18.....	5.24@5.50	1.90@1.91	5.64@6.13
Mar. 18.....	5.24@5.50	1.95@1.95½	5.38@5.88
Apr. 19.....	5.15@5.65	1.81@1.86	5.38@5.64
May 19.....	5.15@5.65	1.75½@1.76	5.14@5.38
June 18, 1927.	5.00@5.25	1.70	5.12@5.14

Other Ports

Boston, coal, per ton....	\$7.86
Boston, oil, f. a. s., per barrel	\$1.82
Hampton Roads, coal, per ton, f.o.b., piers \$4.35 to 4.50	
June 10 — Cardiff, coal, per ton.....	14s 0d
London, coal, per ton....	s—d
Antwerp, coal, per ton..	21s 6d
Antwerp, Fuel oil, per ton	80s 0d
Antwerp, Diesel oil, per ton.....	95s 0d
British ports, Fuel oil..	80s 0d
British ports, Diesel oil..	95s 0d

Reviews of Late Books

The Running and Maintenance of the Marine Diesel Engine, by John Lamb; cloth, 523 pages, 5 by 7½ inches; published by J. B. Lippincott Co., Philadelphia and furnished by MARINE REVIEW, Cleveland, for \$7.50 postpaid, and in Europe by the Penton Publishing Co. Ltd., Caxton House, London, for 37s 6d.

This book has seven plates and 218 illustrations. It is printed in rather small but clear type on good paper, and its popularity and usefulness is attested by the fact that this is the third edition. The author is evidently a practical engineer, as in the preface to this book it is stated that he has gained further experience at sea and ashore on vessels propelled by different types and makes of diesel oil engines.

Some of the subjects covered in chapters are: Liquid Fuels, Combustion of Fuel, Lubrication, Starting Mechanism, Reversing Gears, Indicators and Indicator Diagrams, Air Compressors, Mechanical Injection, Opposed Piston Engine, Still Engine, Port Work and Watch Keeping.

The author has consistently maintained throughout, the practical outlook of a seagoing engineer and the book is therefore particularly useful for engineers changing from steam to diesel. Practical ways are described for preventing and remedying troubles which may occur in the operation of diesel engines. The book is therefore really a working tool and a practical guide rather than a text book or treatise. The language used is plain.

Illustrations show clearly the more important features of the different parts of the oil engines. There are 27 tables in the text. Reference to the illustrations is made easy by an alphabetical list preceding the subject index. It is a book which should be very useful for any engineer interested in the operation or design for that matter, of the diesel engine.

Sailing Ships At a Glance, by Edward W. Hobbs, A. M. I. N. A.; cloth, 221 pages, 5½ by 8½ inches; published by G. P. Putnam's Sons Co., New York and London; furnished by MARINE REVIEW, Cleveland, for \$2.50 postpaid, and in Europe by the Penton Publishing Co. Ltd., Caxton House, London for 12s 6d.

For anyone who wishes to know about the origin and development of sailing ships this book is of real usefulness and great interest. It is in

fact a pictorial representation of sailing ships of different eras in the world's history. There are 150 illustrations from sketches made by the author.

The author gives to the reader that knowledge of ships which is necessary in order to appreciate the daring explorers and pioneers in the making of history. After reading this book one can also better appreciate the activities of those merchants who laid the foundations for the vast ocean traffic we now have. Ships have played an important

part in American history from the days of Columbus and the voyage of the MAYFLOWER. To the sailor or any man of adventuring spirit, the real thrill comes from the beautiful sailing ship and the author has performed his work well because he is, himself, deeply interested in the subject. Sailing ships of all periods are described and illustrated from the old Egyptian crafts 6000 B. C. up to the present racing yacht.

Increase Lake Draft

Early in June the recommended draft on the Great Lakes sent out by George A. Marr, secretary of the Lake Carriers' association was as follows: For St. Mary's river 19 feet 3 inches, for Lake Superior loading. This is an increase of 3 inches. The draft on Lake St. Clair, is 19 ft., 6 in.

From the Editor's Mail

To the Editor:

I have noticed recently in the nautical periodicals and newspapers some discussion of shipbuilding along the lines of the need for expansion in the shipbuilding industry, which discussion comes at a very appropriate time, when shipbuilding has fallen into serious straits. I have been connected with shipbuilding for many years, previous to the war and since the war, and have never witnessed similar conditions. As you know many yards have closed, some are about to close, and unless something constructive is done shortly more will be forced to close. This will affect not only the shipyards but to a large degree the steel mills which roll the plates and other forms of steel for the ship hulls and boilers.

Much has been said about the present condition of the shipbuilding business, with special emphasis being laid to the fact that this condition is due to the wartime activities. The explanation may be satisfactory to the casual thinker who is inclined to say that under the conditions nothing can be done or should be done, and who does not give proper weight to the effect on industry as a whole when one of its major branches is seriously ill, so ill in fact that talk alone will not effect a cure. Under the conditions of the naval agreement between the various Powers, no great help can be expected from the navy for some years to come. It is true that eight scout cruisers are under

contract for the navy, but two of these have been apportioned to the navy yards, leaving but six for all the shipyards in the country.

It seems to me, therefore, that the time has arrived when action must be substituted for our old affliction of too much talk. The news prints have been carrying accounts of magnificent new passenger ships for foreign lines, while the best we seem able to get is discussion of reconditioning the AGAMEMNON and MOUNT VERNON, which are now tied up. To completely rehabilitate them would require too much money for the class of business they would have to handle.

The thought has occurred that since the expenditure of money for war vessels is restricted by the naval agreement, a portion of that which would under normal conditions be appropriated for this purpose should be appropriated for the building of a few passenger vessels to supplement the Fleet corporation lines. Since the money is available and as there is opposition to subsidies to counterbalance the disadvantage of the greater cost of operating ships under the American flag and admitting that capital is reluctant about taking the risk involved, congress certainly should uphold General Dalton in his laudable desire to procure a merchant marine suited to the dignity of a maritime nation.

Yours very truly,

William Schaubel
3520 North Sixteenth St., Philadelphia.

Complete Passenger Boat for Canada S. S. Lines

Making her maiden voyage, leaving Montreal June 18 for Quebec and returning to Montreal June 19, the S. S. ST. LAWRENCE, latest and finest addition to the fleet of the Canada Steamship Lines Ltd., was completed in record time after her launching which occurred on June 1. She will enter the Montreal Saguenay service of the Canada Steamship lines.

The ST. LAWRENCE was built at the Davie Shipbuilding & Repair Co. Levis, P. Q., with Prof. Herbert C. Sadler acting as consulting naval architect, and is the largest vessel serving the river whose name she bears being 309 feet 10 inches in length and 67 feet wide at the main deck. She has twin screws and is an oil burner. Her engines and boilers were built in England. All staterooms, 250 in number, are outside rooms. Of these 18 are parlors equipped with twin beds and private bath. Half of the balance are equipped with toilets.

The public rooms are commodious and are beautifully finished. The lounge situated aft on A deck occupies the entire width of the ship and is finished in oak paneling, with an ivory tinted ceiling. Wide plate glass windows afford an excellent view. A flat hardwood floor has been fitted in this room for dancing. When chartered for conventions this room, accommodating 500 people, may be used for assemblies.

The dining room is paneled in walnut and also has wide observation windows. The floor is covered with heavy carpet and the ceiling is of ivory tint. It is possible to accommodate 200 guests at one time. The entrance lobby and stairways are also finished in walnut but the hallways and stateroom interiors are of duco finish in an ivory tint.

Safety of passengers has received special attention. Fire detection apparatus and sprinklers have been installed in each room and along the hallways. Every consideration has been given to the comfort and convenience of the guests. It is interesting to note that the company's program calls for the construction of two additional similar vessels, to be ready by May 1, 1928.

B. F. Affleck Launched

On June 25 the steamer B. F. AFFLECK was launched at the Toledo Shipbuilding Co., Inc., Toledo, O. This steamer is a duplicate of the A. F. Harvey, recently completed at the yard of the Great Lakes Engineering

Works, Detroit. She is being built for the Pittsburgh Steamship Co. and will be delivered during the summer. Capt. G. H. Banker will be in command.

The large freighter, a 12,000-ton vessel, 604 feet long overall and 60 feet wide with a depth of 32 feet was named after B. F. Affleck, president of the Universal Portland Cement Co., a subsidiary of the United States Steel Corp. with plants at Chicago, Duluth and Pittsburgh. Mr. Affleck left school at the age of 13, entered a machine shop, studied nights, held a clerical position in a railroad office and later became salesman, general sales manager and then president of the Universal Co. Mrs. B. F. Affleck christened the boat.

After completion the B. F. AFFLECK will carry ore from the head of the lakes to Lake Michigan and Lake Erie ports, limestone from Michigan to the steel and cement plants at Chicago, Buffington, Ind., Gary, Ind., Lorain, O., and Duluth, and coal from Lake Erie ports to ports on Lakes Michigan and Superior.

The new steamer is one of the units in the lake carrying developments of the Universal Co., a feature of which was the formal opening by vice president Charles G. Dawes on June 9 of the company's harbor at its Chicago (Buffington, Ind.) plant—the first private harbor to be built on Lake Michigan in 20 years. It is one of only three such harbors on all the Great Lakes. The others are at Gary, Ind., and at Calcite, Mich.

Lake to Ocean Service

A subsidiary of the recently organized Terminals & Transportation Corp. of America, the Detroit New York Transit Co. has started a direct freight service between New York and Detroit. The first sailing was the motorship TWIN PORTS from New York on May 28. It is planned to make this a fast merchandise and package freight service between these two ports. Automobiles are likely to form a good share of the cargo. A number of prominent automobile manufacturers are backing the project. A. Miller McDougal heads the subsidiary company as well as the parent organization.

To begin the service the two motorships TWIN PORTS and TWIN CITIES have been chartered from the Minnesota Atlantic Transit Co. They are to sail at nine or ten day intervals from either terminal. The barge canal to Oswego on Lake Ontario and the Welland canal will be used.

John F. Metten Heads New Engineering Co.

In order to save the technical talent represented by the William Cramp & Sons Ship & Engine Building Co.'s organization a new corporation has been formed known as the Marine Engineering Co. with headquarters in Philadelphia. John F. Metten, chief engineer of Cramps and with many years of experience in the design and building of vessel machinery has been chosen to head the new concern.

The announcement of the retirement of Cramps from shipbuilding gave considerable cause for thought to the officials of the navy department and it is planned that the engineering concern of which Mr. Metten has been chosen president will continue intact the technical skill which is so essential in such a specialized art as shipbuilding. The new company will have charge of the design of all the scout cruisers. Eight such vessels are to be built and the drawings and plans will go along with the building of the ships covering a period of three years.

Appointed Commissioner

Arthur J. Tyrer, assistant commissioner of navigation, department of commerce for the past 25 years, has been appointed commissioner succeeding D. B. Carson, who has resigned.

Commissioner Tyrer is well known to shipping men and has had personal contact with many of them. He began as a clerk in the bureau of navigation in 1902 and has worked his way up from the ranks.

Secretary Hoover of the department of commerce announced that D. B. Carson of Nashville, Tenn., who recently asked to be relieved of the duties of commissioner of navigation, has consented to undertake special service with the department of commerce in connection with matters relating to the enforcement of the navigation laws.

Directors Re-elected

The Interlake Steamship Co. held its annual meeting early in June in Cleveland and the following directors were re-elected: Samuel Mather, H. G. Dalton, Harry Coulby, H. S. Pickands, Elton Hoyt II, H. P. McIntosh and Moses Taylor. The following officers were also re-elected: President, Harry Coulby, vice president, H. S. Pickands; secretary and treasurer, S. E. Bool; assistant secretary and treasurer, C. C. Canfield and auditor, H. P. Drake.

Personal Sketches of Marine Men

H. H. Raymond, Chairman, Atlantic, Gulf & West Indies Steamship Lines

By E. C. Kreutzberg



STEP by step during 42 years of service he has risen from purser in the Mallory line to chairman of the largest combine of American coastwise lines.

A STRONG sense of justice and his habit of backing up his co-workers to the limit has won for him the loyalty of the company's personnel afloat and ashore.

OF HARDY sea-faring stock he has an inborn love for the sea. Yachting is his principal recreation, having owned and sailed several well-known racing sloops.

HARRY HOWARD RAYMOND, the new chairman of the Atlantic, Gulf & West Indies Steamship lines, is of that tribe of folk down east which is reputed to be web-footed. His ancestors lived at Yarmouth, Nova Scotia, and were shipping people being pioneers in the steamship business between Yarmouth and Boston and St. John, N. B. Young Raymond was born in 1864, and his childhood was spent in the atmosphere of the sea and shipping. He received his education at the Yarmouth seminary, spending his vacations, as he grew older, working in some branch or other of the family shipping business. At the age of 17 he finished his schooling and went to work as a clerk with the line that operated between Boston and Yarmouth. This was the Clements Steamship Co., named after an uncle.

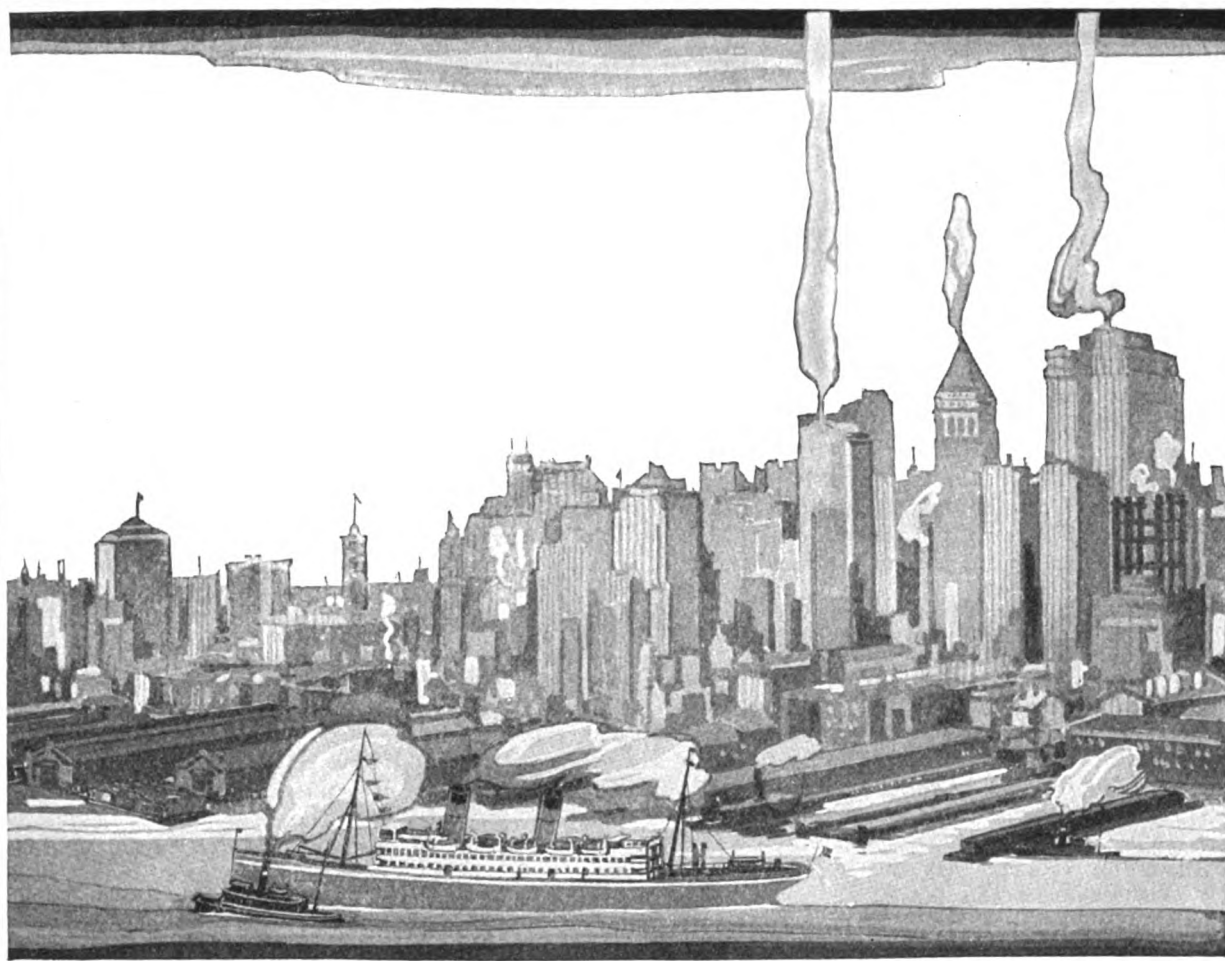
Then something happened which seems quite improbable, for Mr. Raymond today is a big, hearty man, radiating health and strength. At the age of 20 his health failed and he had to go South. He went to Florida. There he not only regained his health but developed an affection for that state which he has held ever since. In addition he grasped a vision of the future of Florida which since has contributed largely to his progress as one of the leading figures in the shipping business. After recuperating for a while, Mr. Raymond went to work as a clerk for the St. Johns River Transit Co. In 1885 he started his connection with the Mallory line, becoming purser of the STATE OF TEXAS, which plied between New York, Port Royal, S. C. and Fernandina, Fla.

His rise since has been steady. In 1888 he became traveling agent for his company. The following year

he was called to the New York office and remained there until 1892 when he returned South as general Southern agent. In 1899, he again was called North, becoming superintendent in charge of operation, and later general manager. In 1907, when the consolidation was effected which since has developed into the Atlantic, Gulf & West Indies Steamship lines, Mr. Raymond was elected vice president and general manager of both the Clyde and Mallory lines. In 1915 he was elected president of the two companies, serving in this capacity until his recent election as chairman of the Agwi lines. In addition, Mr. Raymond also served as president of the Gulf & Southern Steamship Co. and the Colombia Steamship Co., and as a director of the New York & Cuba Mail Steamship Co., the New York Porto Rico Steamship Co. and other allied shipping interests.

The gigantic construction program for the Clyde line which was started a few years ago and which is now reaching completion, undoubtedly is Mr. Raymond's biggest single achievement toward the development of the coastwise shipping industry in this country. This program includes six steamers aggregating 45,000 tons and involving an outlay of approximately \$14,000,000. The ships need not be described here excepting to state that they incorporate every modern facility for adding to the comfort and safety and speedy transportation of passengers and for the most effective handling of freight.

Mr. Raymond became a naturalized citizen of the United States in 1892. He served as lieutenant in the naval reserve during the Spanish American war. During the world war he was made a member of the council of national defense. On Jan. 28, 1918, he was appointed vice chairman of the shipping control committee of the



*The Almost Constant
Arrival of
Ocean Liners*

IN a harbour as intricately channelled and heavily trafficked as the Port of New York, everlasting care must enter into the operation if the Towing and Handling Service is to function successfully and economically.

Moran Service has grown in efficiency as the Port has grown in importance.

Adequate equipment and a long and successful experience is the proud record of this Organization—through three generations.

Consultation and advisory service is extended gratuitously to owners and operators.

MORAN TOWING & TRANSPORTATION CO., INCORPORATED
17 BATTERY PLACE, NEW YORK
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MORAN
Service 

MARINE REVIEW—July, 1927

United States shipping board. As his duties had much to do with the overseas transportation of American troops and supplies, he spent time in England, France and Italy. In recognition of his services, the French government conferred upon him the decoration of Chevalier of the Legion of Honor. During the war he was president for a number of years of the American Steamship Owners' association.

An outstanding feature of Mr. Raymond's career has been his ability to win and hold the loyalty of his subordinates. He has a strong, fundamental sense of justice and has the reputation of backing up his men to the limit, even when they make mistakes—provided the mistakes are made with honest intentions. Mr. Raymond is a believer in the value of personal contacts. In manner he is friendly and confidence-inspiring. He is distinctly of the Nordic type and has keen blue eyes. He speaks little but to the point. He has a wide circle of friends both in business and socially. Business associates describe him as bluff, straightforward and big-hearted.

Mr. Raymond votes the Republican ticket and in religion is an Episcopalian. He is married and has an apartment in New York but makes his principal residence in Florida. He recently bought his old boyhood home at Yarmouth and spends part of the summers there.

Mr. Raymond plays considerable golf and is a member of numerous golf clubs. His principal recreation is found in yachting. He is an able navigator and has owned and sailed several well-known racing sloops as well as cruising motor yachts. He now is looking forward to sailing a new yacht, designed by Theodore E. Ferris and under construction at Shelburne, Nova Scotia. He is a member of the New York, Larchmont, Manhasset Bay, Indian Harbor and other yacht clubs. Other clubs of which Mr. Raymond is a member include the Metropolitan and India House, New York and the Whitehall club, London.

Following are the companies and services which make up the Agwi groups, of whose board Mr. Raymond now is chairman: The Clyde line, operating between New York, Charleston, Jacksonville and Miami; Miami and Havana; Boston, Charleston, and Jacksonville; New York and Baltimore; Jacksonville and Miami; and a service on the St. Johns River; Clyde-San Domingo line, operating between New York and San Domingo; Mallory line, plying between New York, Key West and Galveston; New York, Tampa and Mobile; Porto Rico line; between New York and Porto Rico; Ward line, two services, one between New York and Havana, and the other between New York, Havana and Mexico and the Southern Steamship Co., operating between Philadelphia and Houston.

Self-Docking a Floating Dry Dock

A FLOATING dry dock should be periodically examined inside and out. To do this, it must be placed in a larger dry dock or there must be means for self-docking so that the entire exterior may be completely removed from the water. The results of such dry docking and examination of floating docks is usually of interest, particularly any reports bearing on the condition of the exterior.

In 1918, the Charleston Dry Dock & Machine Co., Charleston, S. C., put in

operation an 8000-ton floating dry dock of the longitudinally trussed sectional type designed by The Crandall Engineering Co. of Boston. This floating dock was of all-wood construction built with six sections. In the longitudinally trussed type, the panel of a Warren truss is built into both wing walls of each section. At the panel points are steel castings with corresponding lugs which when pinned together form the dock into a rigid unit with a Warren truss in each wing. The lugs of these steel castings are con-

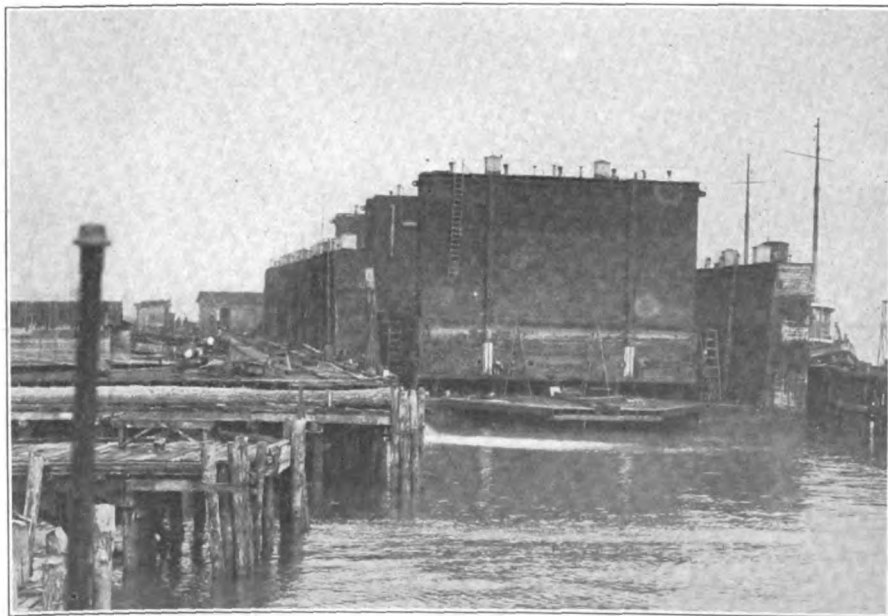
nected in each case by a single pin, there being four pin connections between each section. For docking, it is only necessary to remove these four pins, turn a section through 90 degrees and dry dock it on the others as shown in the accompanying illustration.

The submerged portion of the dock was sheathed with a layer of ship's felt and 1-inch creosoted boards and then another layer of creosoted boards to protect this portion of the dock from the marine borers which are unusually active in Charleston harbor.

In the latter part of 1926, after having been in service eight years, the sections were disconnected in sequence and lifted on the others as above described until all had been removed from the water and examined and repaired. This whole dry docking operation was easily accomplished.

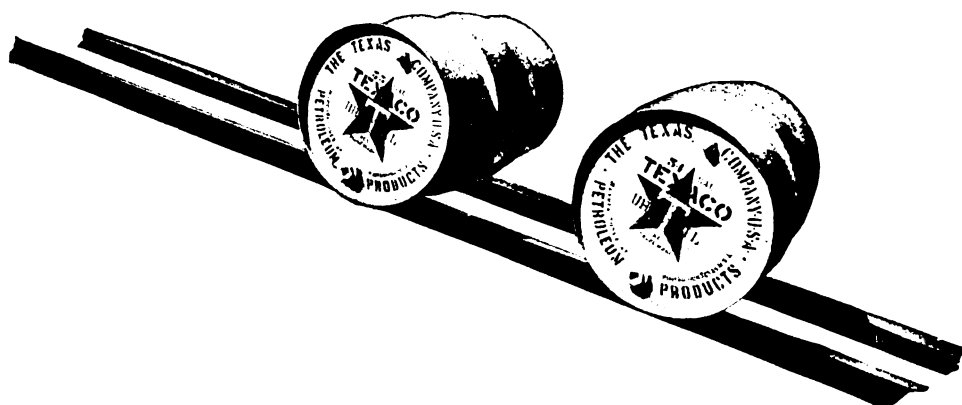
C. B. Boykin, general manager of the Charleston Dry Dock & Machine Co., reported that examination showed the dock structure to be in perfect condition. In some places the outer sheathing of creosoted boards was eaten away but the inner sheathing was still intact and there was not a worm in any part of the dock itself. Examination of the inside of the dock showed that considerable mud had accumulated but that all parts of the trusses and framing were in first-class condition.

The outer sheathing was renewed where required and any corroded fit-



TAKEN DEC. 12, 1926—SHOWING THE DRY-DOCKING OF ONE SECTION OF THE 8000-TON DRYDOCK AT THE CHARLESTON DRYDOCK & MACHINE CO., CHARLESTON, S. C.

Roll 'em Aboard!



There's more Lubricating ability in every barrel—and far less Carbon.

In the operation of the Diesel Engine, where lubrication must be positive and uniform, this is important; because any oil that forms hard carbon will produce high temperatures, destructive wear and loss of power.

prisingly small amount of carbon; and that soft and fluffy.

Many of the world's Navies and Merchant Marines who are now using TEXACO URSA OIL highly praise its small carbon content and its dependable and economical lubricating qualities.

We, on our part, are so certain of the superiority of "URSA" for Diesel Engine lubrication that we earnestly entreat you to try it.

No matter what port you buy it at, each barrel of TEXACO URSA OIL will be found to be the same pure, clean, dependable lubricant for Diesels.

And remember: There is a Texaco lubricant for every purpose aboard ship.

TEXACO URSA OIL for Diesel Engines

is pure and unblended. And because it contains no paraffine, leaves a sur-

We invite your inquiry regarding any Texaco Marine Lubricant and extend the fullest co-operation of our Engineering Department.

STOCKS KEPT AT PORTS THROUGHOUT THE WORLD



THE TEXAS COMPANY
MARINE SALES DIVISION
Dept. K7, 17 Battery Place, New York City
OFFICES IN PRINCIPAL CITIES



tings replaced after which the dock was put again in commission. This floating dock is the largest on the Atlantic coast south of Newport News and has been almost constantly in use since it was built.

Launch S. S. Laurentic for White Star Line

The new LAURENTIC building at Belfast, Ireland for the White Star line was launched on June 16. The first LAURENTIC was sunk off the coast of Ireland during the war when carrying troops and \$25,000,000 in gold.

She is of 18,700 tons register and has been designed for the St. Lawrence river trade but is also adapted to winter cruising and it is expected will make her first voyage in January on a New York to Mediterranean cruise. After a second such cruise she will enter the Montreal Liverpool service in the spring of 1928.

The LAURENTIC is a triple screw vessel, 604 feet long and 75 feet in breadth. The power plant is of the OLYMPIC type with two reciprocating engines exhausting into a central low pressure turbine. Her sea speed is to be 16½ knots. In appearance she will be similar to the PENNLAND, the DORIC and the REGINA though larger. She has the latest type of passenger accommodations throughout, including suites with sitting rooms and connected bed rooms with full width beds and attached private baths. The dining salon seats 310 persons. On the promenade deck there is a large lounge with permanent floor for dancing, a smoking room paneled in oak, a drawing room in the Empire style, a playroom for children, a gymnasium and a veranda cafe. Her passenger capacity in cabin is 400 and for transatlantic trade 1600.

Latest appliances for quick and efficient handling of cargo have been installed. There is an unusually large capacity for refrigerated cargo of all kinds at varying temperatures as required. In addition to the wireless installation the LAURENTIC will be fitted with a wireless direction finder, submarine signal apparatus, non-magnetic semaphore installation and a gyro compass.

British Naval Architects

The Institution of Naval Architects will hold its summer meeting at Cambridge, England, July 12-15. The meetings will open in the senate house on July 12 when the following papers will be read: *Shipping in the Time of Pepys*, by G. S. Laird Clowes Esq.; *Pulverized Fuel for Marine Work*, by

Engineer Commander, J. C. Brand and the *Propulsive Efficiency of Rowing*, by F. H. Alexander Esq. On July 13, members of the Institution will visit Bedford and the Queen's Engineering Works. Additional papers as follows will be read on July 14: *The Analysis of Screw Propeller Efficiency With Particular Reference to Froude's Methods*, by G. S. Baker Esq.; *Average Sea Speed Under Winter Conditions*, by J. L. Kent, and *Deformation and Stressed Distribution in Rigid Airships*, by Prof. William Hovgaard. In the afternoon the colleges will be visited and a garden party will be held in King's College Garden. The banquet of the Institution will be held in the evening in the hall of Trinity college. On July 15 the members will be received and entertained at Ipswich by members of the reception committee at their respective plants.

Axel Rossell 1865-1927

Axel Rossell, well known naval architect, died suddenly from heart disease on May 23. He was born at Kalmar, Sweden, Sept. 17, 1865, and was graduated from the University of Gothenburg in 1888 in the course in naval architecture. Shortly after graduating he came to this country and obtained a position at William Cramp & Sons Ship & Engine Building Co. where he stayed for about seven years when he was called to the Maryland Steel Co. He returned to Cramps in 1896 and a year later was made head of the hull drafting department in which position he continued until the winter of 1918 when he was appointed assistant naval architect of the Emergency Fleet Corp. In that position he worked night and day, seven days a week, in an effort to keep things going properly in the ship yards all over the country.

After the Armistice he resigned from his position with the Emergency Fleet Corp. and joined the Bethlehem Shipbuilding Corp. who sent him abroad as a special investigator. Returning to the United States he supervised the reconditioning of the LEVIATHAN, the REPUBLIC and other large passenger steamships. With Horace H. Thayer he opened an office in Philadelphia under the firm name of Rossell & Thayer, naval architects and marine engineers. Mr. Thayer is continuing this office in the Whitespace building, Philadelphia.

Mr. Rossell was affiliated with the Masonic order, and was a member of the Society of Naval Architects

and Marine Engineers since 1895. His home was at Devon, Pa., and he is survived by his wife, Florence J. Rossell.

United Fruit Steamer Has Trial Trip

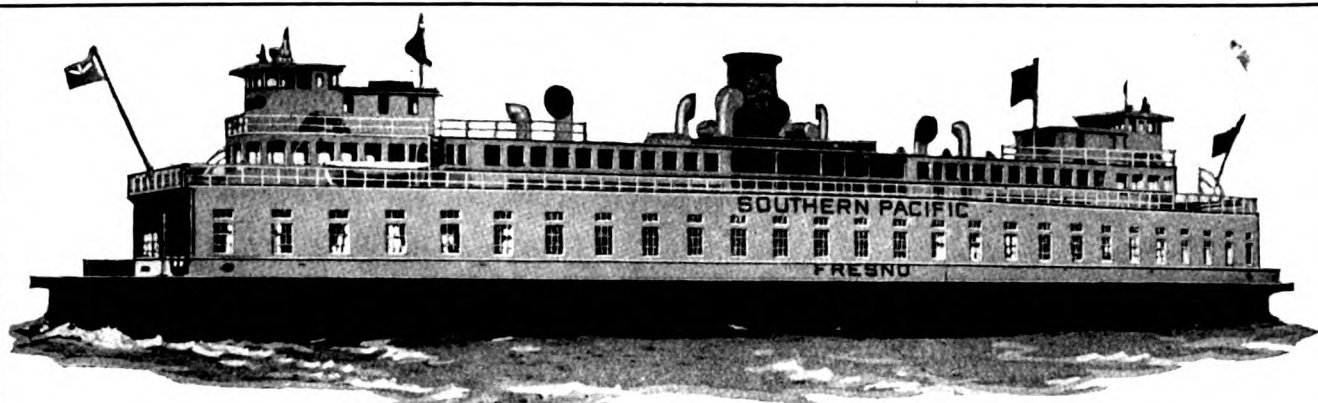
On May 31 the S. S. IRIONA, a finely modeled fruit and passenger vessel for the services of the United Fruit Co., satisfactorily passed her sea trials and was turned over to representatives of the owner. This is the third vessel completed this year by Workman, Clark & Co. Ltd., Belfast for the United Fruit Co. She was built under special survey of the British corporation to its highest class. The principal dimensions are: Length overall 357 feet; breadth, 48 feet; and depth, 31 feet 6 inches with a gross tonnage of about 4200. The IRIONA is of the poop, bridge and forecastle type with large deck-house superstructure amidships for first class passengers.

The passenger staterooms accommodate two or three passengers and include en-suite rooms and a large number of cabins with private bath rooms. The smoking room, lounge and dining salon are spacious and attractively decorated. The culinary arrangements are of the most modern type including a kitchen and bakery fitted with oil burning and electric cooking equipment.

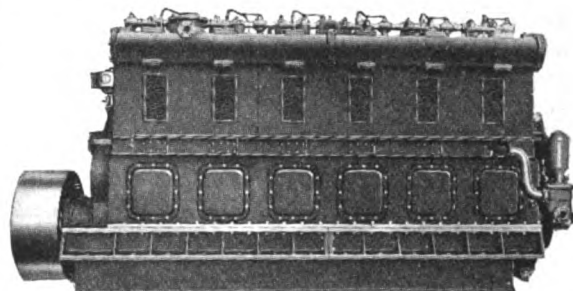
Large cold storage chambers with refrigerating plant are provided for provisions and special cargo. There are three 'tween decks forward and aft and also hold spaces especially arranged for carrying fruit. Ventilation of fruit spaces is obtained by means of large cowl ventilators which deliver fresh air to all the compartments. Special mechanical exhaust arrangements are fitted to each space. In cold weather the air supply is heated.

D. H. Young, superintending engineer of the United Fruit Co. accompanied by J. Shirley Esplen and Mr. O'Sullivan attended the trial in the interests of the owner.

JACOB CHRISTENSEN rammed the Matson liner MALOLO in a heavy fog off Nantucket May 25. Her bow was badly crumpled (shown in an illustration on another page) but the collision bulkhead saved her. A survey was made and bids were received to make repairs. Morse Drydock Repair Co., New York, where the MALOLO is also being repaired, was successful bidder at a figure of \$23,000 and 12 days' time. Six bids in all were received ranging all the way up to \$30,110,000.



New Diesel Electric Ferry, "Fresno," one of the largest vessels of this type ever constructed. L. O. A. 256' 0"; W. 66' 0"; D. 19' 0". Capacity 100 automobiles. Powered with four 450 B. H. P. Nelseco Diesel Engines—Type 6 MI-22.



Nelseco Diesel Engine of latest mechanical injection type, 450 B. H. P. at 230 R. P. M.—Type 6 MI-22.

Southern Pacific Completes New Diesel-Electric Ferries

RECORD time has been made on the construction of the Southern Pacific's new fleet of Diesel-powered ferries. Six new vessels—Fresno, Stockton, Lake Tahoe, Santa Rosa, Mendocino and Redwood Empire—have passed all trials and are now in regular service.

This is indeed a noteworthy achievement both on the part of the builders and the companies that supplied the necessary materials and equipment.

All of the power units used in these mammoth ferries were furnished by the New London Ship & Engine Company. These included 24 Nelseco Diesels of the latest mechanical injection type—each vessel being powered with 4 engines of 450 B. H. P.

each. This order for 24 Nelseco engines, totaling 10,800 H. P., is the largest commercial contract for marine engines ever placed in this country.

These new ferries are now being used in transporting automobiles across San Francisco bay . . . from San Francisco to Oakland and from San Francisco to Sausalito. Three are being operated by the Southern Pacific Railroad and three by the Northwestern Pacific Railroad.

Nelseco engineers will gladly tell you about other interesting installations and will furnish astonishing figures on the low operating cost of Nelseco Diesel Engines.

Write for Pamphlet MR.

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Ile De France Sails

(Continued from Page 16)

cafe terrace. The terrace is 75 feet 4 inches in width and duplicates on the sea the interesting side walks and cafes of the Paris boulevards. Adjoining the smoking room on the port side is the bar of unusual size. It is 29 feet 6 inches long and 6 feet 9 inches deep.

Forward of the grand salon on the starboard side is an attractive library and writing room. Opposite on the port side is the Punch and Judy show and children's playroom furnished with appropriate sized chairs and benches. On both sides of the promenade deck, forward of the library is a winter garden of glass enclosed deck space. The two sides each 58 feet 11 inches by 24 feet 6 inches are connected by an enclosed passage. The winter garden is attractively decorated with flowers and plants and fitted with wicker furniture of the porch variety. One of the special features of this vessel is the large amount of deck space. From the cafe terrace forward to, but not including the winter garden, the promenade deck is 368 feet 4 inches long and in some parts is 24 feet 6 inches wide. On the forward end of the sun deck is a very complete modern gymnasium. It is 89 feet 3 inches long by 29 feet 6 inches wide.

It is claimed that the grand dining salon of the ILE DE FRANCE is the largest ever built on any steamer. It is like all the other public rooms characterized by the beauty and taste of its decorations. The room is entirely done in marble in three different delicate shades of gray. The walls are ornamented only by luminous squares of glass of an old gold tint which spread a soft diffused light. One hundred and twelve large port hole settings furnish light during the day time. Indirect lighting is used entirely in the dining salon. The stair case to the dining room is unique, built of gray marble, it descends from both sides to a central landing and from this landing it descends directly to the floor in three directions separated by marble balustrades. Forming the background for the stairs, facing the captain's table and rising to full height from landing to ceiling is a great mural painting in the style of the ancient maps in color, of a map of the province of ILE DE FRANCE. It has the appearance of being a rare old giant tapestry. The floor covering of the grand dining salon is a specially made domestic carpet costing one million francs.

Forward of the main dining salon are four private dining rooms. Two of these will accommodate eight diners each, the other two six diners each. The decorations of these dining rooms give an atmosphere of real comfort. Pupils of the Boule school under the direction of their professors are responsible for the decorative conception and execution of these smaller dining rooms, to the smallest detail.

A specially built permanent chapel presenting a fine example of church decoration is one of the unique features of this vessel. The decorations are in light colored lemon wood with panels in emboine and much gold bronze. There is a dome over the altar and the crucifix of molded glass is lighted from behind. Above the crucifix on either side of the dome ceiling are paintings in color and gold of Saint Louis and Saint Genevieve the patron saints of ILE DE FRANCE. The altar rail is a hand wrought iron grill. The chapel is two decks in heights and the lower floor accommodates fifty worshippers and the tribune or balcony seats 30 more.

There is a grand foyer four decks in height around which on the lower deck are grouped shops, a branch of one of the famous Paris stores. Here may be found a beauty parlor, barber shop tobacconist, candy shop and other similar conveniences.

Between the funnels all obstructions have been eliminated leaving clear stretches of deck space large enough for a regulation sized tennis court. Unboxed automobiles of passengers, to a number of 60, can be accommodated in a special hold. It is impossible to convey by words an adequate idea of the richness, beauty and comfort of this new flagship of the French Line, the ILE DE FRANCE.

Canadian Package Boats

The single screw package freighters CITY OF HAMILTON and CITY OF MONTREAL were recently completed by the Midland Shipbuilding Co., Midland, Ont. for the Canada Steamship Lines Ltd. These vessels are used in the Toronto, Hamilton, Montreal package freight express service. Both vessels were launched Jan. 12 last, within one half hour of each other.

They are of all steel canal type fitted with 'tween decks and double bottoms, 238 feet long, 38 feet beam and 23 feet in molded depth. Power is furnished by triple expansion steam engines with two boilers each 13 feet 6 inches in diameter.

The speed is 12 miles per hour and the deadweight capacity is 1500 tons.

Recent Sales of Ships

The United States shipping board has approved the sales, and transfer of registry in one case, of the following tonnage:

APHRODITE, steel steam yacht, owned by Payne Whitney of New York to Greek registry in view of a proposed sale of this vessel to A. K. Ringa of New York and Athens, Greece. Mr. Ringa is a naturalized citizen of the United States.

CONNERSVILLE, CRANENEST, CRAINCREEK and CRAWLKEYS, steel steam vessels of shallow draft, lake type of 3364 tons deadweight each, equipped with reciprocating engines of 1240 indicated horsepower and designed to steam at 9½ knots, to Madrigal & Co., Manila, P. I., for the sum of \$112,000. The vessels will be operated in the Philippine coastwise trade and from the Philippines to Australia.

SACRAMENTO, SUTHERLAND, steel, steam vessels of 7462 and 7387 deadweight tons respectively and each equipped with engines of 2030 indicated horsepower and designed to steam at 10 knots to the Charles Nelson Co., San Francisco for the sums of \$104,000 and \$107,000 respectively.

CHANTIEU, steel, steamship of lake type and used as a supply ship by Commander Richard E. Byrd in connection with his flight to the North Pole, to C. B. Repp, Plainfield, N. J. for \$33,000 payable 25 per cent in cash and the balance in five equal installments.

World Markets

LAMPAS, single deck steamship, 8300 deadweight tons, 5505 gross tons, for about £70,000 to Petroleum Maats "La Corona," The Hague.

NOLISEMENT, single deck steamship, 8060 deadweight tons, 4447 gross tons, for £46,000 to Tempus Shipping, Cardiff.

WESSERLING, single deck steamship, 7810 deadweight tons, 5098 gross tons, for about £30,000 to Delmas Freres, La Rochelle.

DAYTON, single deck steamship, 8200 deadweight tons, 5329 gross tons, for £46,000 to Care & Marquand Shipping Co., Cardiff.

Lake Cargo Movement

Though apparently this season on the Great Lakes is a slow one from the vessel man's point of view on account of the amount of idle tonnage, statistics show that 4,969,219 tons of ore was delivered at Lake Erie ports during the month of May this year which was a very considerable increase over the deliveries for May last year which amounted to 3,337,888 tons. Also the receipts for the whole season to June 1 this year were 5,701,987 tons compared with 3,337,888 for the same period last year. This means that last year no cargoes were carried earlier than the month of May. This year considerable movement was taken care of in April.

The movement of coal is apparently lighter than last year, but only apparently so. Shipments for this year up to June 6 for instance were 9,948,338 tons as compared with the same period in 1926 when the movement was 5,889,724 tons. An earlier start and several large new steamers has had the tendency to ease up on the demand for vessels of any kind.



Always Sell "C. I. F." and Specify American Ships

BY quoting prices on a basis of "c.i.f." rather than "f.o.b." you are enabled to choose for the carriage of your cargoes American ships operated for the United States Shipping Board, and thus in two ways give impetus to the expansion of your export trade.

The United States Shipping Board Freight Services are constantly developing and fostering new markets for American business—sailing regularly and frequently and carrying their cargoes promptly and safely to their destinations. Furthermore, they are under the direction of experienced

American operators who are in a position to give valuable advice to prospective shippers.

Included in this fleet are the speedy passenger ships of the United States Lines, sailing from New York to principal European ports. In addition to carrying passengers, the United States Lines ships, led by the famous Leviathan, provide an exceptional express freight service.

For complete information regarding freight or passenger services consult "Schedule of Sailings", a comprehensive publication issued by the Traffic Department, or write direct.

United States Shipping Board Merchant Fleet Corporation

WASHINGTON, D. C.



Rebuild Wrecked Tanker

(Continued from Page 21)

are carried under Welin quadrant davits.

The motive power is furnished by a triple expansion three-cylinder reciprocating steam engine 3000 indicated horsepower, with a piston speed of 560 feet per minute. Steam is provided by three scotch boilers, fitted for burning oil, although coal may be used should the occasion demand. Current for the ship's lighting is supplied by two steam-driven generators, of 13.75 kilowatts each and one of 6 kilowatts. The ship's propeller is 17 feet 9 inches in diameter.

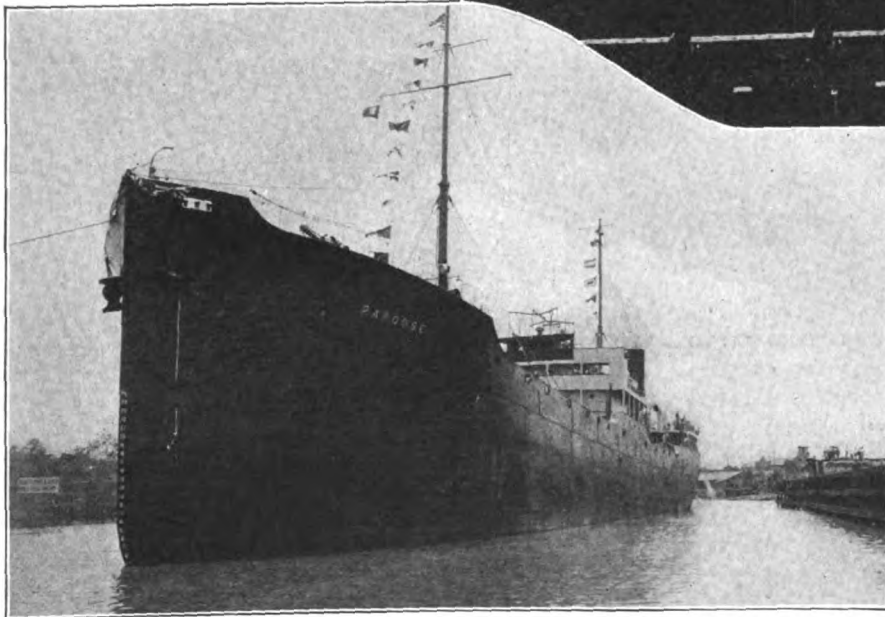
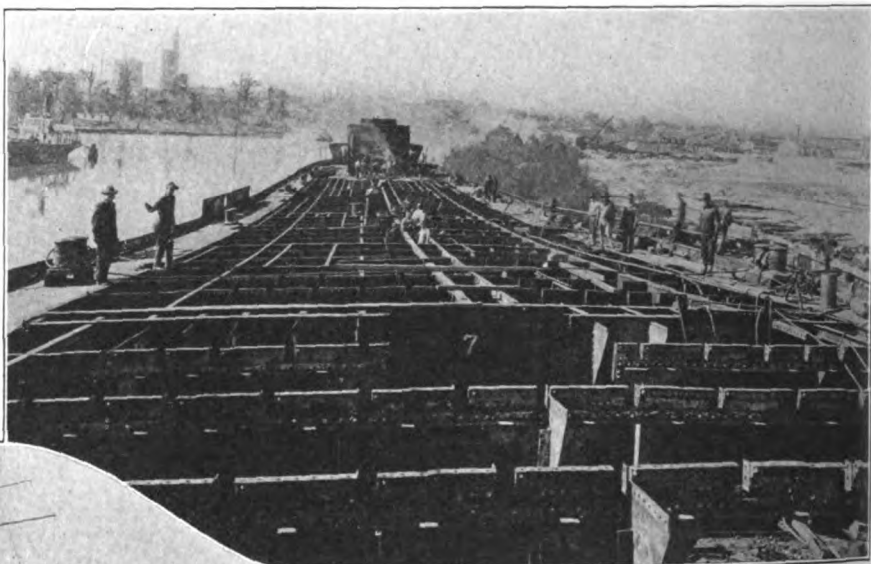
The engine room auxiliaries include two steam driven fuel oil service pumps, a centrifugal salt water circulating pump, two sanitary pumps, a fire and ballast pump, a Metropolitan double tube injector, an horizontal duplex steam driven bilge pump, a Weir distilling set, and a steam whistle. The engineer's workshop is

fice, and tile bath, is elaborately finished in oak and mahogany, with teakwood used on the doors and other exposed parts. Mahogany was used in the officers' dining saloon. Upholstered couches and bowl lights as well as high class swivel chairs were fitted in this room, making it comfortable and fine in appearance. The suite of the chief engineer is hardly less elaborate than that of the captain, and in the engineers' saloon, too, there are beau-

VANUS were not damaged in the collision which destroyed so much of her equipment, and comparatively little had to be done in the way of overhauling them. However, an auxiliary condenser has been added, and all machinery was thoroughly overhauled.

The cost of remodeling the tanker aggregated approximately \$500,000 and today her valuation is conservatively placed at twice that sum.

Immediately after the christening



COMPLETED TANKER (EX SILVANUS) LEAVING THE REPAIR YARD, MAY 31, 1927, SHORTLY AFTER HAVING BEEN RECHRISTENED PAPOOSE

equipped with an 18-inch lathe, a 16-inch shaper, a 21-inch drill press, and a one-horse-power double emery wheel.

The first job that confronted the repair yard workmen in rebuilding the damaged tanker was the replacement of the steel plates on the port side forward, whole sections having been torn away by the collision with the THOMAS H. WHEELER.

At the same time work began on the reconstruction of the officers', engineers', and crew's quarters, and all of these deck structures are now fine examples of modern shipbuilding. The captain's suite, including bedroom, of-

tiful sideboards, mirrors and lights.

The crew's quarters, in the fore-castle, are fitted out with conveniences never dreamed of by old A. B.'s of other days. Running water, steam heat, electric lights, fans, and ample space in which to move about give the layman the impression that the seamen aboard the PAPOOSE are going to be far more comfortably situated than those on the average tanker or freighter. These rooms are finished in oak and teakwood, while the doorknobs are of brass and the other incidentals of equally high quality.

The engine and boilers of the SIL-

WRECKED TANKER SILVANUS UNDER RECONSTRUCTION AT THE PENNSYLVANIA SHIPYARDS, INC., BEAUMONT, TEXAS, JAN. 3, 1927

ceremonies at the Pennsylvania plant, the PAPOOSE began taking on a capacity cargo of 67,000 barrels of gasoline at the Magnolia Refinery at Beaumont, whose docks are located hardly a mile down the Neches from the ship-building concern. From Beaumont the PAPOOSE sailed for New York.

Audible Smoke Detector

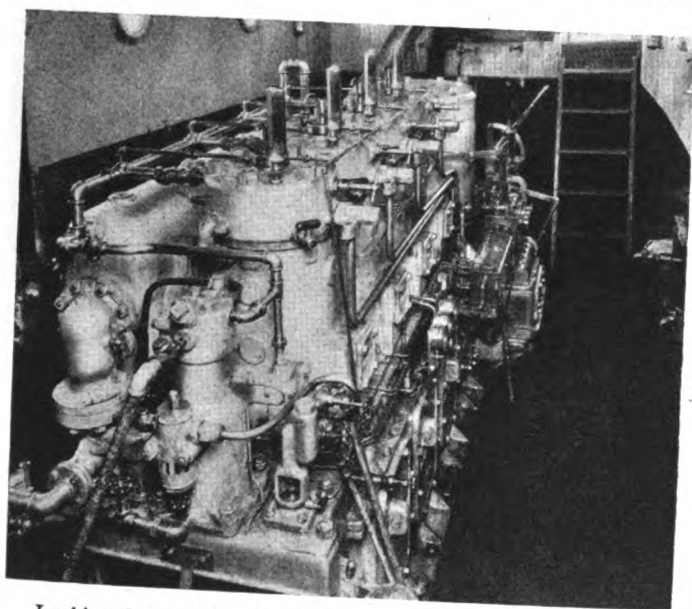
The Rich system of detecting fire by means of smoke appearing at the end of pipes in a cabinet conveniently located in the pilot house is quite well known. Walter Kidde and Co. is now bringing out an improvement on this system by which smoke of invisible quantity will operate an alarm gong. The presence of smoke not only actuates the alarm gong but at the same time causes the detector to automatically release the extinguishing system and to close fire doors.

The new device consists of a detecting cabinet and a pipe system connecting this cabinet with the spaces protected. Samples of air are continuously drawn through these pipes from each space. The presence of smoke in this air operates the alarm.

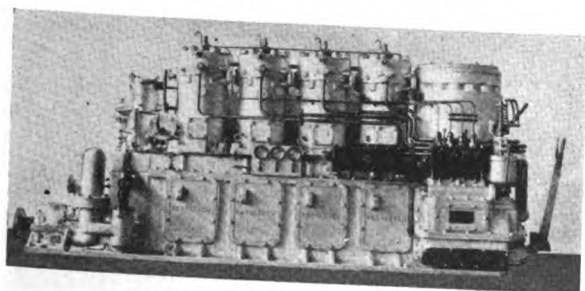


The Bethlehem Diesel Engine

Installed in the U. S. Army Dredge Tender Manteo



Looking forward in the Engine room of the U. S. Army
Engineers Dredge Tender MANTEO



Starboard view of above engine

The Dredge Tender MANTEO illustrated above is equipped with a Bethlehem Diesel Engine of 320 S.hp.

The view at the left shows the small engine room necessary to accommodate such a comparatively powerful engine.

The use of the Leissner system of fuel injection, the absence of camshafts and rocker arms, and the general simplicity of construction contribute toward economy and efficiency of operation.

Bethlehem Diesel Engines Type M are built in units of 3, 4 and 6 cylinders in sizes ranging from 90 to 570 S.hp.

Bethlehem Steel Company
Bethlehem, Pa.

Please send me a copy of your catalogue on Diesel
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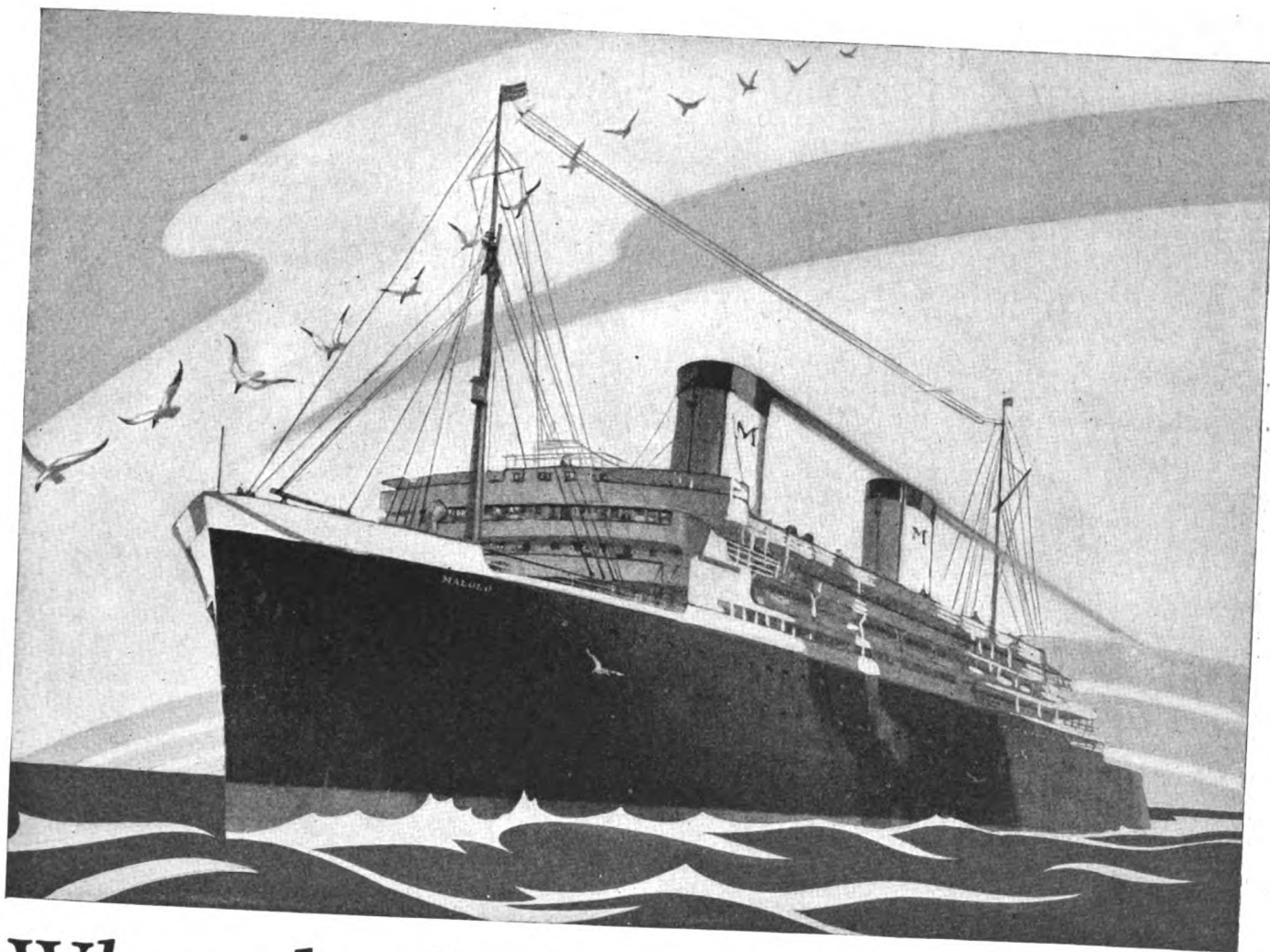
MARINE REVIEW—July, 1927

Late Flashes On Marine Disasters

Brief Summaries of Recent Maritime Casualties—
A Record of Collisions, Wrecks, Fires and Losses

NAME	DATE	NATURE	PLACE	DAMAGE RESULTING	NAME	DATE	NATURE	PLACE	DAMAGE RESULTING
A. H. Ferbert	May 16	Collision	Lorain	Damaged	Keyport	June 11	Aground	Nr. Hocking Val.	Floated
Athelstane	May 23	Disabled	New Orleans	Boiler	Kalyan	May 19	Fire	Nr. Port Sudan	Not stated
Amasa Stone	May 26	Struck dock	Detour	Bow	Lycia	May 18	Ashore	Nr. Sombrero	Floated
Arlington Court	May 2	Collision	Buenos Ayres	Damaged	Leonard Hanna	May 26	Collision	Lake Huron	Not stated
Athenic	May 4	Collision	Buenos Ayres	No. 4 hold	Lorena	June 3	Capized	Alligator River	
Aghios Marcus	May 12	Disabled	St. Vincent	Leaking	La Habra	May 24	Collisions	Eastham	Bow
Athena	May 18	Sank	Nr. La Nouvelle		Letterfourie	May 19	Disabled	Youghal	Boiler tubes
Alpena	June 5	Aground	St. Clair River	Floated	Maplewood	May 18	Collision	Hudson River	Upper deck
Arkansas	June 3	Collision	Off Tatoosh	No. 1 hold	Mobile	May 22	Fire	Mobile	Stern plates
Arno	May 14	Stranded	Hamburg	Not stated	Malola	May 25	Collision	Off Nantucket	Considerable
Amiral Jauregui-berry	May 23	Aground	Nr. Paullac	Floated	Moncenisio	May 2	Aground	Point Indio Chan.	Not stated
Amable Angela	May 25	Sank	Nr. Villeta		Miyazaki Maru	May 12	Stranded	Tokio	Considerable
Aleutian	June 6	Fire	San Francisco	Cargo	Magdapur	May 10	Fire	Dundee	Not stated
Alvina	June 6	Ashore	Cripple Cover	Total loss	Margrethe	May 15	Collision	Antwerp Docks	Port side
Arizona	June 1	Ashore	Flushing	Floated	Matador	May 16	Fire	Madeira	No. 2 hold
Arundale	June 2	Ice	Montreal	Plates; frames	Mervyn	May 25	Struck quay	Garston	Starboard bow
Amasis	June 2	Collision	Glasgow	Port side	Mont Viso	May 26	Collision	Buenos Ayres	Port side
Balfie	May 4	Collision	Buenos Ayres	Port bow	Mississippi	June 1	Collision	New Orleans	Sank
Bessie M. Dustin	June 1	Fire	Spectacle Island	Damaged	Mana	June 5	Ashore	San Francisco	Floated
Big Jimsie	May 25	Ashore	Nr. Ellis Bay	Total loss	Manx Maid	June 2	Collision	Princes Landing	Not stated
Balto	May 26	Ashore	Gibraltar	Not stated				Stage	
Baltannic	May 31	Ashore	Off Surop	Floated	Northern No. 19	May 24	Sank	W. of Romer	Raised
Brenta II	June 1	Heavy	Off Marseilles	Hull;	Nanto Maru	May 11	Ashore	Nr. Funakawa	Not stated
		Marseilles		Leaking				Akitaken	
Blairbeg	May 26	Ice	Off Halifax	machinery	Nordvhal	May 18	Sprang leak	Lima	Not stated
Boston Floating	June 1	Fire	Fisk's Wharf	Total loss	Nidarholm	May 27	Ashore	Nr. East Point	Floated
Brecon	June 7	Disabled	Falmouth	Rudder stock	Neree	May 29	Abandoned	St. Pierre Bank	
Bronx	June 13	Collision	Off Battery	Not stated	New Londoner	May 20	Collision	Newcastle Quay	Not stated
Canadian Carrier	May 16	Explosion	Halifax	Not stated	Niceto De	May 26	Collision	Buenos Ayres	Not stated
Cassaquel	May 4	Aground	Buenos Ayres	Floated	Larrinaga				
Christina Fraser	May 16	Collision	Sydney	Damaged	Oakspring	May 13	Disabled	Barbados	Engine
Cauto	June 1	Disabled	So. Isle of Pines	Lost propeller	Okinawa Maru	May 31	Stranded	Gyoryute	Sank
Conus	May 16	Aground	Nr. Balabec	Floated	Olavus	May 19	Ice	E. Kvarken	Rudder; prop.
			Straits	Floated	Okinawa Maru	June 3	Ashore	Nr. Mokpo	Not stated
Comely	May 24	Fire	Loch Linhe	Total loss	Pajala	May 13	Ashore	Cape Henry	Floated
Catharina	June 1	Collision	Nr. Gjedser	Waterlogged	Plume	May 12	Collision	San Francisco	Plate
D. J. Morrell	May 22	Struck dock	Superior	Plates; frames	Patterson	May 19	Aground	Nr. Alameda Mole	Floated
Delaware	May 18	Collision	Hudson River	Steering gear	Port Melbourne	May 20	Aground	Buttermilk Chan.	Floated
Danubio	May 4	Ashore	Nr. Kara Burnu	Floated	Penn Barge 251	May 27	Collision	New York	Considerable
Dominic	May 2	Aground	Tavaru, Parana	Floated	Point Lobos	May 24	Fire	At sea	No. 4 hold
Donau	May 15	Collision	Antwerp Docks	Not stated	Peterston	May 2	Collision	Buenos Ayres	Damaged
Desna	May 18	Fire	Buenos Ayres	Not stated	Porto Rico	May 28	Aground	San Juan	Floated
Dartford	May 27	Disabled	Kent Island	Machinery	Prof	May 14	Disabled	N. W. Ymuiden	Machinery
Ena F. Parsons	May 4	Collision	Apple River	Not stated	Proefs	May 31	Ashore	Sea of Marmara	Floated
Everett Hays	May 10	Struck reef	Umnak Island	Sank	R. Bottsford	May 19	Aground	Not stated	Not stated
Everglades	June 13	Aground	Cook Bay	Floated	Roberto	May 18	Ashore	No. Valencia	Floated
Eurymedon	June 2	Collision	Off Dungeness	Below water line	Redman	June 12	Ashore	Sagua La Grande	Floated
					Scarsdale	May 18	Fire	Hudson River	Not stated
Francis E. House	May 24	Aground	Gray's reef	Floated	Southcas	May 17	Struck sub.	New Orleans	Not stated
Foy	May 5	Stranded	E. of Bridlington	Floated			object		
Frances Anne	May 31	Aground	Pooles Island	Not stated	Sudbury	May 20	Disabled	Off Goat Island	Engine
Foldenford	June 3	Ashore	South Pass	Floated	San Melito	May 27	Aground	River Plate	Floated; rudder
Falke	June 1	Struck by lightning	Nr. Hela	Considerable	Smyrne	May 2	Ashore	Karaburnu	Floated
					St. David	May 5	Struck	Penangles Pt.	Stem
Goldengate	May 12	Collision	San Francisco	Not stated	Seminole	May 4	Collision	Belfast	Port side
Gypsum King	May 23	Struck	Nr. Diamond Reef	Damaged	Shoho Maru	May 5	Stranded	Shimonoseki	Floated
Geo. W. Parker	May 10	Fire	So. of Algonac	Sank	Sebastiano Caboto	May 9	Collision	Tientsin	Not stated
Groite	May 26	Struck subm. object	La Plata	Prop. blades	Siang Yang Maru	May 11	Collision	Nr. Vine Point	Badly
					S. E. Calvert	May 12	Aground	Nr. Goole	Floated
Ganges Maru	May 30	Heavy weather	Hong Kong	Rudder	Selam	May 14	Collision	Bender Eregli	Damaged
					Sunewarkco	May 27	Collision	Colon	Not stated
Hugoton	May 27	Collision	New York	Not stated	Surenico	June 3	Collision	Off Tatoosh	Bow
Henry Cracker	May 27	Aground	Nr. Sandy Hook	Waterlogged	Sheaf Brook	May 20	Aground	Memel	Not stated
Hartney W.	May 4	Collision	Apple River	Fore rigging	Sierra	June 6	Aground	Lime Kiln Cross-	Floated; plates
Holywell	May 12	Ashore	Redcar Rocks	Floated-				ing	
				damaged	Samoa	June 5	Collision	Off Pt. Conception	Port side
Harelda	May 30	Fire	Antwerp	Machinery;	Spenser	June 7	Ashore	Middle Ground	Floated
				cargo	Skogheim	June 3	Collision	Yonkers	Not stated
Hyacinthus	May 30	Aground	Mikindani	Floated	Stentor	May 31	Explosion	Dover	Not stated
Hayatori Maru	May 1	Heavy weather	Off Cheju Island	Wrecked	Saturn	June 1	Collision	Nr. Gjedser	Not stated
					Storsten	June 2	Disabled	Rotterdam	Machinery
Heroic	June 1	Collision	Liverpool	Not stated	Skirmisher	June 2	Collision	Princes Landing	Bulwarks
								Stage	
Indian Harbor	May 19	Aground	So. of Pt. Gordo	Leaking	San Jose	June 2	Collision	Off Folkestone	Bow
I. L. Elwood	May 19	Collision	St. Clair River	Damaged	Thomas Britt	May 19	Collision	St. Clair River	Damaged
Ikala	May 12	Collision	Off St. Antoine	Plates; stem	Trinidadian	June 1	Collision	New Orleans	Not stated
Italian Fulgor	May 25	Collision	Galveston	Upper works	Thrasvoulos	May 23	Ice	Barry	Bottom
Iron Master	May 16	Ashore	Adelaide	Floated	Torlak Skogland	May 23	Collided	Santos	Bow
James E.	May 16	Collision	Lorain	Damaged			quay		
Davidson					Thomas R. Buck-	May 25	Struck pier	Atchafalaya River	Sank
James McGee	May 12	Collision	Off St. Antoine	Holed amid-	Troilus	June 2	Collision	Off Dungeness	Not stated
				ship	United States	June 6	Fire	Sarnia	Considerable
Jacob Christensen	May 25	Collision	Off Nantucket	Forepeak	Utilia	June 6	Ashore	Off Guarico	Not stated
			lightship		Vertrauen	May 25	Ashore	Kiel	Floated
John D. Archbold	May 27	Collision	Colon	Rudder	Vanduyck	June 10	Ashore	Martinique Pt.	Floated
Johannes	May 15	Collision	Brunsbüttelkoog	Damaged	Western World	May 13	Struck bank	Bahia	Not stated
John Alfred	May 19	Sank	So. of Tyne		West Irmo	May 19	Aground	Nr. Calabar	Floated
Jacob Luckenbach	May 16	Ashore	Costa Rica	Floated	William	June 9	Disabled	Port Huron	Steering gear;
Julius Miller	June 13	Collision	Off Battery	Badly				plates	
Kilvey	May 4	Collision	London	Not stated	Livingstone				
Kibi Maru	May 9	Collision	Tientsin	Not stated	Wm. H. Doheny	June 11	Disabled	Sandy Hook	Steering gear
Keiun Maru	May 9	Stranded	Barlow Island	Not stated	Warrior Service	June 1	Collision	New Orleans	Sank
Kasado Maru	May 18	Ashore	Nr. Nemuro Hak-	Total wreck	Yoseric	June 1	Ashore	Saddle Islands	Floated
			kaido						
Kara Deniz	May 21	Ashore	Sinope	Floated					

sters



When the S. S. Malolo crashed, Exide was standing by!

A SHIP looming suddenly out of the fog . . . a grinding crash . . . and in three minutes the proud new S. S. Malolo was drifting helplessly, with dead fires in her flooded boiler rooms!

At the same time the generators were put out of commission. Until the auxiliary diesel engine generator could be started, the big liner was without a permanent supply of electric current.

Yet why didn't the lights fail? They flickered once, but then blazed up as bright as ever—and kept burning!

And why wasn't the radio silent? The generators were dead—yet within a few minutes after the crash the S O S flashed out over the air!

The explanation is—
Exide Batteries.

The instant that the generators failed, the lighting circuits were automat-

ically switched to a big Exide that was charged and ready for just such an emergency.

Up in the radio room, when the operator felt the shock of the collision, he switched his set to the Exide Emergency Radio Battery that is part of his equipment. Then he tapped the key and his call for help went out as clear and strong as ever.

This great ship, the largest American-built liner, was designed by Gibbs Bros. and constructed for the Matson Line in full compliance with the International Conference for Safety of Life at Sea.

When she was launched we were proud to state that a complete equipment of Exide Batteries was part of her numerous safety devices. We also stated what these Exides would do when called on in an emergency. They did it.

Exide BATTERIES

FOR EVERY MARINE USE

THE ELECTRIC STORAGE BATTERY COMPANY, Philadelphia

Exide Batteries of Canada, Limited, Toronto

MARINE REVIEW—July, 1927

New Trade Publications

FLEXIBLE COUPLINGS—Smith & Serrell, Newark, N. J., has issued a bulletin covering its marine type of flexible coupling, discussing the advantages of this type over a rigid shaft, giving instructions for installing and engineering data by which the proper size coupling may be selected.

ELECTRIC WELDING—Electric Arc Cutting & Welding Co., Newark, N. J., has issued two bulletins, one describing its generator for alternating and direct current and its portable welding device.

PNEUMATIC RIVETERS—Hanna Engineering Works, Chicago, has issued a bulletin covering its pneumatic riveters, describing the operating characteristics of its riveters and giving general information on the art of riveting. Diagrams and halftones illustrate the text.

OXYGEN MANIFOLDS—Air Reduction Sales Co., New York, has issued a section of its standard catalog devoted to manifolds for controlling discharge of oxygen from a number of cylinders. By use of these devices oxygen is distributed by pipe line at proper pressure to a number of cutters and welders. It is illustrated to show method of connecting cylinders and regulating pressure.

REFRACTORIES—A bunch of "bouquets" for its product and service is presented by the Laclede-Christy Clay Products Co., St. Louis, with a list of accomplishments in the refractory field by this company.

ARC WELDING ACCESSORIES—Importance of accessories used in arc welding is stressed in a bulletin by the General Electric Co., Schenectady, N. Y. Shields, helmets, electrode holders, brushes, electrodes, cable and other devices are illustrated and described.

PULVERIZERS—Raymond Bros. Impact

Pulverizer Co., Chicago, has issued a catalog with some unusual features. Various pulverizing problems are gone into in considerable detail and suitability of various pulverizers to different classes of material is discussed. A complete air separating plant is described. It is well illustrated by halftones and diagrams.

OIL EQUIPMENT—Universal need for lubricating oil for every turning wheel in industry is the text of a bulletin by S. F. Bowser & Co. Inc., Fort Wayne, Ind. Need for accurate measurement and saving of oil from spillage or over measurement are emphasized and use of various devices is suggested as a means to that end.

PYROMETER—Pyrometer Instrument Co., New York, has issued a leaflet describing its radiation pyrometer, with description of its construction and use to determine temperatures from a distance.

CENTRIFUGAL PUMPS—Single-stage, double-suction, volute centrifugal pumps of several different sizes are described in a catalog issued by the Ingersoll-Rand Co., New York. Cross sections of the various parts are shown to give constructional features.

WRENCHES—J. H. Williams & Co., Buffalo, has issued the twentieth edition of its catalog of wrenches. This edition includes a new alloy steel wrench, describes a new finish and presents chain pipe tongs and light clamps, in addition to the line formerly presented.

COAL PULVERIZER—Illinois Stoker Co., Alton, Ill., has issued a booklet describing its equipment for pulverized coal firing. By consolidation of the K-B Pulverizer Corp. with this company a complete unit system is provided. Low speed of operation, grinding

of the coal and immediate air separation of dust are features of this equipment. Coal is reduced to a fine condition by the use of abrasive blocks. Complete data are presented.

ELECTRIC EQUIPMENT—Among current bulletins by the General Electric Co., Schenectady, N. Y., are the following: Squirrel cage motors; drum type controller equipment; control equipments; hand-starting compensators; automatic starting compensators; shoe-type solenoid brakes.

ELECTRIC HOISTS—Shepard Electric Crane & Hoist Co., Montour Falls, N. Y., has issued an illustrated descriptive catalog of its floor-operated electric hoists. Illustrations portray various installations. Construction is covered by illustrations and data.

WIRE CLOTH—Federal Wire Cloth Co., Newark, N. J., has issued a catalog of its products. It contains much matter in addition to previous issues. Tables are provided to give information to users of wire cloth.

CARBON DIOXIDE METERS—Leeds & Northrup Co., Philadelphia, manufacturer of electrical measuring instruments, has issued a bulletin covering its device for measuring carbon dioxide in gases passing to the stack from furnaces. It is fully illustrated to cover installation and all details of the device.

SPEED REDUCERS—Link-Belt Co., Chicago, is circulating a booklet describing its speed reducer as manufactured by its subsidiary, the H. W. Caldwell Co., Chicago. It is fully illustrated by halftones and diagrams and includes tabular data.

CENTRIFUGAL PUMPS—Dean Hill Pump Co., Anderson, Ind., describes in a current bulletin a ball-bearing type of double section pump. Drawings and details show its construction and data are supplied.

PORTABLE ELEVATOR—Revolator Co., Jersey City, N. J., has issued a bulletin on its hand power model with revolvable base for raising and tiering materials. Illustrations show construction, and operation and complete data are given.

Business News for the Marine Trade

Linea Mercanta de Colombia American Co., New York, has been incorporated to operate steamships, with \$10,000 capital, by R. C. Diaz, J. Davila and C. Muller. G. L. Robinson, 150 Nassau street, is attorney.

Maritime Accessories Corp., Fort Washington, N. Y., has been incorporated with 100 shares no par value by W. J. Eldredge, C. P. Schroetter and J. R. Stewart. Foley & Martin, 64 Wall street, New York, are attorneys.

William A. Golden, New York, has been incorporated with 100 shares no par value, to deal in ships and barges by W. A. Golden, M. R. B. Golden and C. Golden. H. H. Klein, 56 William street, New York, is attorney.

Steamer Romulus Corp., New York, has been incorporated with \$100,000 capital to operate steamships, by T. P. Gallagher, R. A. Murphy and M. Werner. Crowell & Rouse, 24 Broad street, is attorney.

Sagami Steamship Co., New York, has been incorporated with \$300,000 capital by A. Skillman, E. Kraychi and J. E. Medler. H. Goldman, 120 Broadway, is attorney.

Merrian Bros. Inc., Boston, has been incorporated with \$125,000 capital to deal in marine hardware and similar products by John Gordon, president, 100 Milk street, Boston; Frank W. Merriman, treasurer, 185 Armory street,

Jamaica Plain, Mass., and Elise D. Gordon, clerk.

Steam Tug O'BRIEN sisters and steam tug P. H. Wisse have been incorporated at Port Washington, N. Y., with 100 shares no par value each, by W. J. Eldredge, C. F. Schroetter and W. A. Knight. Foley & Martin, 64 Wall street, New York, are attorneys.

Foreign Outlet Co., New York, has been incorporated with \$2000 capital to act as shipping agents by N. Goldstein and G. Goldstein. H. Goldstein, 1117 Gerard avenue, is attorney.

Inspector Steamship Corp., New York, has been incorporated with \$100,000 capital by H. C. Hand, S. C. Wood and R. J. Gorman. Crowell & Rouse, 24 Broad street, are correspondents.

Sudbury Steamship Co., Albany, N. Y., has been incorporated with 1000 shares no par value by H. C. Band, H. J. Gorman and S. C. Wood. J. R. Vanhorne, 67 Wall street, New York, is attorney.

Pere Marquette railroad has ordered from the Manitowoc Shipbuilding Corp., Manitowoc, Wis., a 400-foot car ferry to be used on St. Clair river. It will be put in service about Nov. 1.

Marine Equipment Co. Inc., Norfolk, Va., has been incorporated with \$20,000 capital by

S. Lloyd Drake, Portsmouth, Va., and Julius Schlain, Norfolk.

York River Terminal Co. has been incorporated at Richmond, Va., by Channing M. Ward, 2314A Grove avenue, William V. Crump and R. Grayson Dashiell, Mutual building.

Canadian government merchant marine will build, instead of purchase, the additional ships required for special service between Canada and the British West Indies, provided for in the trade treaty effected some time ago. Five ships will be required, and tenders will be called immediately for their construction. Three of the ships will be built in Canada and two in the United States. The cost is estimated roughly at \$500,000 each.

The city of Port Arthur, Ont., has made a new agreement with the Port Arthur Shipbuilding Co., the basis of which will be embodied in a bylaw and submitted to the ratepayers April 6. If the bylaw carries the company will be granted a fixed assessment of \$125,000 for ten years, in return for which it guarantee to spend \$300,000 in development work and also guarantees an annual pay roll of \$200,000.

Independent Barge Canal Towing Corp., Buffalo, has been incorporated by J. A. Stone.